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The Acquisition Of Sociolinguistic Variation In A Mexican Immigrant Community

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The Acquisition Of Sociolinguistic Variation In A Mexican Immigrant Community

Abstract

In language change originating within the speech community, child acquisition begins with “faithful transmission of the adult system” (Labov 2007:346). On entering their peer group, children participate in incrementation of change. Input from multiple generations of speakers is arguably necessary for children to advance a language change. With stable variable input, children are reported to acquire their parents’ probabilistic usage, then maintain it among peers. This dissertation asks what can be learned about the acquisition of sociolinguistic variation from a case where children receive limited generational evidence about their community’s linguistic variables. I examine whether these youngest speakers participate in incrementing change, or whether they reinterpret the pre-existing variation. Study participants are six families of immigrants from Puebla in the Philadelphia Mexican community, consisting primarily of a first generation of young adults and a growing second generation of children. Participants themselves recorded day-to-day family interactions, including speech from both caregivers and children. I analyze the acquisition of two variable features: a morphological alternation in the 2nd person singular preterit inflection between standard *aste*, *iste* and non-standard *astes*, *istes*; and frication and deletion of the voiced alveolar flap /ɾ/ in syllable-final position. Addition of non-standard preterit *-s* is widely reported in other Spanish varieties; change in progress has not been previously observed. Frication of syllable-final /ɾ/ has previously been reported as undergoing change. I find that children use the standard [ɾ] variant of syllable-final /ɾ/ significantly less frequently than their parents. This study also provides the first report of syllable-final /ɾ/ deletion in Central Mexican Spanish, present among both parents and children. Furthermore, the younger generation deletes much more frequently while producing the fricative infrequently or not at all. Children also use the non-standard preterit suffixes significantly more frequently than caregivers, a development that would be atypical of the acquisition of stable variation. I show that even with reduced generational input for the children of this community, they are participating in language change. This study also replicates the finding that both caregiver and peer group influences are detectable in the variable aspects of children’s grammars in the process of language acquisition.

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MEXICAN IMMIGRANT COMMUNITY

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THE ACQUISITION OF SOCIOLINGUISTIC VARIATION IN A MEXICAN
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Any errors that remain are my own – cualquier error que persista aquí es mío.

ABSTRACT

THE ACQUISITION OF SOCIOLINGUISTIC VARIATION IN A MEXICAN IMMIGRANT COMMUNITY

Marielle Lerner

Gillian Sankoff

In language change originating within the speech community, child acquisition begins with “faithful transmission of the adult system” (Labov 2007:346). On entering their peer group, children participate in incrementation of change. Input from multiple generations of speakers is arguably necessary for children to advance a language change. With stable variable input, children are reported to acquire their parents’ probabilistic usage, then maintain it among peers. This dissertation asks what can be learned about the acquisition of sociolinguistic variation from a case where children receive limited generational evidence about their community’s linguistic variables. I examine whether these youngest speakers participate in incrementing change, or whether they reinterpret the pre-existing variation. Study participants are six families of immigrants from Puebla in the Philadelphia Mexican community, consisting primarily of a first generation of young adults and a growing second generation of children. Participants themselves recorded day-to-day family interactions, including speech from both caregivers and children. I analyze the acquisition of two variable features: a morphological alternation in the 2nd person singular preterit inflection between standard *-aste*, *-iste* and non-standard *-astes*, *-istes*; and frication and deletion of the voiced alveolar flap /ɾ/ in syllable-final position. Addition of non-standard preterit *-s* is widely reported in other

Spanish varieties; change in progress has not been previously observed. Frication of syllable-final /ɾ/ has previously been reported as undergoing change. I find that children use the standard [r] variant of syllable-final /ɾ/ significantly less frequently than their parents. This study also provides the first report of syllable-final /ɾ/ deletion in Central Mexican Spanish, present among both parents and children. Furthermore, the younger generation deletes much more frequently while producing the fricative infrequently or not at all. Children also use the non-standard preterit suffixes significantly more frequently than caregivers, a development that would be atypical of the acquisition of stable variation. I show that even with reduced generational input for the children of this community, they are participating in language change. This study also replicates the finding that both caregiver and peer group influences are detectable in the variable aspects of children's grammars in the process of language acquisition.

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1 INTRODUCTION

In language change that originates within the speech community, child acquisition of variable forms begins with “faithful transmission of the adult system” (Labov 2007:346). When children enter their peer group, most commonly when beginning formal schooling, they then participate in incrementation of a change, advancing to surpass their caregivers and older peers. At the same time, studies have identified a lasting effect of parents’ linguistic systems even while children adopt and advance community norms (Johnson 2010, Payne 1976, Roberts 1997b, Sankoff and Laberge 1973, Sankoff 2006; 2016). In the case of stable sociolinguistic variation, children have also been found to acquire their parents’ probabilistic usage, and, rather than going on to increment these frequencies, maintain them upon entering their peer group (Payne 1976, Roberts 1994, Smith, Durham, and Fortune 2007).

This dissertation asks what can be learned about the acquisition of sociolinguistic variation by examining a case where children receive limited generational evidence about the state of linguistic variables in their speech community. The subjects of this study are families with young children in the recently established Mexican community in South Philadelphia, a community with origins in the state of Puebla in central Mexico. This community is primarily constituted of a first generation of young adults, who have immigrated to the United States independently as adults or sometimes in their late teens, and now a growing second generation of their children, many of whom were born in

Philadelphia, and some of whom immigrated at a young age with their parents.¹ Families tend to speak Spanish at home, and children begin learning English primarily on entering the school system.

I examine the question of whether there is the same evidence of the relative influence of caregivers and peers for the new generation of this community of Spanish speakers. The linguistic input of multiple generations of speakers is arguably a necessity for children acquiring a language to be able to advance a language change (Yang 2000). Similarly, Labov observes that each generation advances variable elements of their dialect “in the direction indicated by . . . inherited age vectors” (Labov 2007:346). In this study I also ask whether children still receive and process sufficient cues from their parents’ generation and the generation of their peers, such that they are able to identify and participate in change in progress in Spanish, and distinguish between ongoing change and stable variation. Would the youngest speakers of the community participate in incrementation of a change, lacking the multi-generational evidence that they would have had growing up in Puebla? Or might they possibly reinterpret the direction, or other aspects of, the variation present in their speech community? In a theoretical discussion of language change, Guy (1980) suggests that “This course [of a language change] could also be reversed or arrested, yielding stable variable rules which persist for a long time.” Could children reinterpret the variable usage of their parents’ generation as stable over time due to insufficient evidence of change in apparent time, thus

¹ The term “first generation” is used here to refer to immigrants who were born abroad. “Second generation” refers to their children, i.e., the first generation born in the United States to immigrant parents.

transforming a change in progress into stable variation from the first to second generation of Mexican immigrants?

In order to explore these questions, I analyze the acquisition of two variable features in the Central Mexican Spanish dialect spoken by the Philadelphia immigrant community from the state of Puebla: a morphological alternation in the 2nd person singular preterit inflection (Barnes 2012; Escalante 2015), and frication and deletion of the flap /ɾ/ (Rissel 1989; Lipski 1994; Matus-Mendoza 2004,2005; Moreno de Alba 1994; Perissinotto 1972,1975). Following the methodology of Smith et al. (2007), I use recorded naturalistic speech data, collected by the participants in the study themselves, in addition to sociolinguistic interviews. The resulting body of data includes speech characteristic of day-to-day family interactions and importantly allows analysis of the caregiver input that children receive.

I find no evidence that change in progress has come to a halt with the youngest generation of this community, despite the limited multigenerational evidence in their input. In fact, rather than mirroring their parents' usage, as has been observed in previous studies of young children, the children in this study differ from their parents for both variables studied. The youngest generation appears to be involved in incrementation and possibly reinterpretation of change in the case of frication and deletion of /ɾ/, while potentially initiating a process of change in the case of the 2nd person singular preterit alternation.

As Roberts observes, "The study of the acquisition of variable rules can do much to inform both the studies of sociolinguistics and language acquisition" (Roberts

1997a:369). In Chapter 2, I review what we have learned from such studies so far, and their relevance to the questions explored in this study. Chapter 3 provides a background on the Central Mexican Spanish dialect spoken in the South Philadelphia Mexican community and the linguistic variables analyzed in this study. Chapter 4 introduces the participants in the study and their community, and describes the fieldwork conducted. Chapter 5 discusses the data analysis and results, and Chapter 6 gives a conclusion.

2 CHILD ACQUISITION OF SOCIOLINGUISTIC VARIATION

2.1 Acquisition of variation: Background

Labov makes the observation that “The speakers of the language preserve its history in its variable aspects, even more than its invariant aspects” (Labov 1989:86). This statement reflects the importance of what the variable features of language can tell us about language change. Roberts and Labov (1995) emphasize the importance of including preschool age children (ages 3 and 4) in studies of the speech community. They report that children at this age acquire variable rules along with categorical grammatical rules, as well as the norms of their local dialect, and participate in changes in progress. Children begin acquiring language via a process of transmission from their primary caregivers and other family members, but may start to participate in language change under peer influence when their social networks begin to expand (Labov 2007; Johnson 2010). Thus this study joins the tradition of examining child acquisition of linguistic variation in order to illuminate the processes of language change.

Poplack expresses a conclusion that many have come to: “Current research on dialect acquisition and language change suggests that a child’s speech patterns are affected more by peer-group interaction than by parental influence” (Poplack 1978:89). This is most obviously clear in the virtually exceptionless finding that children will never present the foreign or non-local accent of their parents in their mature grammars

(Chambers 2002). However, it is important to note that Poplack does not say “affected entirely,” but “affected *more*.” Roberts concluded of the acquisition of ongoing sound changes in Philadelphia by preschool children that “The extent of their acquisition of these changes appears to be influenced by the language and dialect background of their parents” (Roberts 1997b:264). Related to the influence of caregiver speech on child acquisition is that women are more often early primary caregivers, and children thus receive more early exposure to changes being led by women, which in turn may go towards explaining the more rapid advancement of female-led changes (Roberts 1997b:263). Similarly, Johnson (2010) concluded of the acquisition of the low back merger in a transitional region in eastern New England that “Peers have the largest effect, but parents have a lasting effect as well” (Johnson 2010:209).

One of the most striking representations of how peer and caregiver input can appear simultaneously in the variable aspects of a child’s grammar comes from Sankoff and Laberge’s (1973) study of acquisition during the formation of the Tok Pisin creole in Papua New Guinea, in which they analyzed a change in the future marker *bai*. The parents in this study are fluent speakers of the pidgin, while their children are the first generation of speakers of the creole.

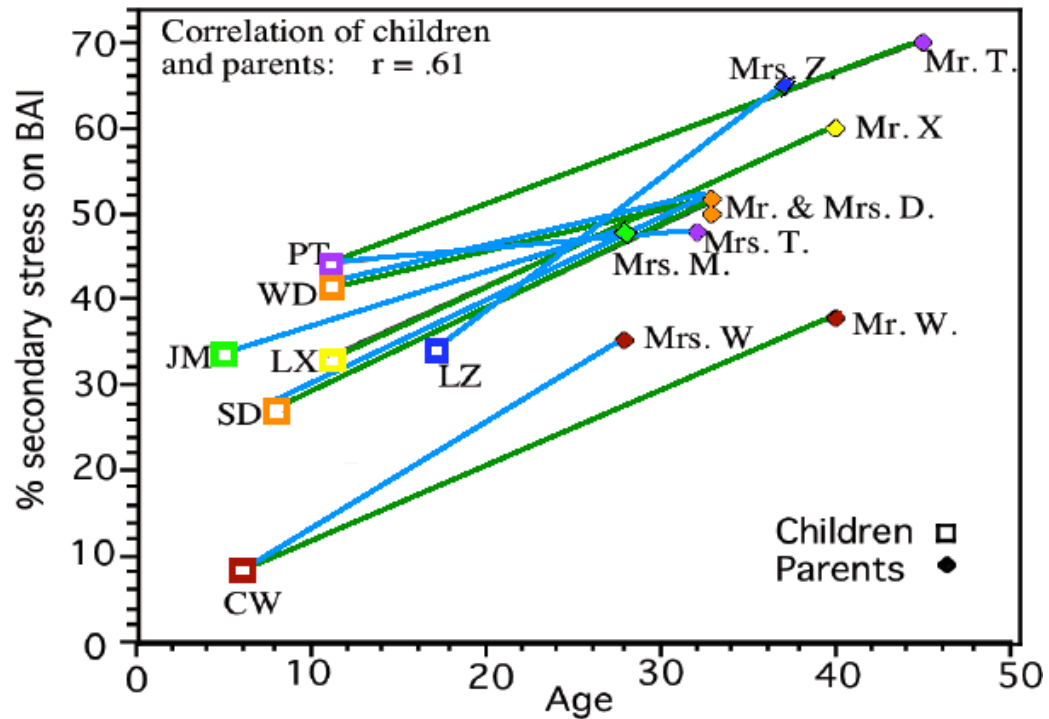


Figure 2.1: Loss of secondary stress on future marker *bai* in Tok Pisin (Sankoff and Laberge 1973; Sankoff 2006, 2016; colors added).²

The change involves the reduction of *bai* in terms of stress and realization of the vowel. Specifically, *bai* was found to be undergoing a three-step progression from secondary stress to tertiary stress to vowel reduction or deletion. Adults used the former two variants fairly equally, but very rarely presented the third. Children most favored the second, tertiary stress, but also used considerably more vowel reduction or deletion than adults. The chart in Figure 2.1 plots the percent use of secondary stress, the outgoing variant, against age, showing a group of children with one or both of their parents. Green lines connect children with their fathers, blue lines with their mothers; parents and

² The original chart, which did not include connecting lines between parents and children, was published in Sankoff and Laberge (1973). Discussion of the correlation between children and parents can be found in Sankoff (2006). This chart, in black and white, can be found in Sankoff 2016.

children in the same family are indicated with symbols of the same color. We can see that all of the Tok Pisin-speaking children are participating in a change in progress along with their generation of peers, and yet the early influence of their parents' speech has not disappeared.

Chambers (1988, 1992) studied the acquisition of a number of British English phonological and lexical variables by 6 children in 2 Canadian families who immigrated to southern England. He found varying success at acquiring new dialect features among the children, though younger children tended to acquire more of the features of British English. Payne (1976), in her study on acquisition of the Philadelphia dialect by children in families who had moved to King of Prussia, Pennsylvania from other dialect regions, found that most children had at least partially acquired phonetic variables, but had more difficulty with phonological variables. The presence or absence of local features in children's' original/home dialects, age of arrival, and number of local peers were all factors for the success of acquisition. Johnson (2010) found differing degrees of peer and parent influence on the acquisition of a vowel merger, depending on the age at which children encountered this new dialect feature, their age at the time of the study, and the presence of the merger in one or both of their parents' speech.

2.2 Acquisition of variables undergoing change

Evidence of differing linguistic forms between generations has been identified as a necessary condition for a language change to progress with each new generation. Yang (2000) discusses the conditions necessary during native language acquisition to produce

language change, saying “...heterogeneity in the linguistic evidence... is a prerequisite for language change” and “...language change cannot take place without sufficiently different linguistic evidence across generations” (Yang 2000:237, 241). In the normal context of a speech community of several generations sharing a common language, the lack of such evidence would imply uniformity of a particular linguistic form across generations. However, a case that has not yet been examined is one in which the lack of evidence is due to a reduced number of generations of speakers being available to children acquiring the language. A question addressed here is thus whether, presented with a change in progress and input from only the parent generation, children will perceive other cues, possibly language-internal or stylistic, that subconsciously indicate to them that a change has been occurring, and cause them to advance the innovative form in the direction of the ongoing change.

In King of Prussia, PA, the community studied by Payne (1976), around 55% of the population was local, which gave incoming children (in families who had moved from other dialect regions) the opportunity to learn the dialect despite a large proportion of in-migrants. Payne also selected families for her study for whom the parents’ dialects had high or neutral prestige. She interviewed families that were local, out-of-state, and mixed.

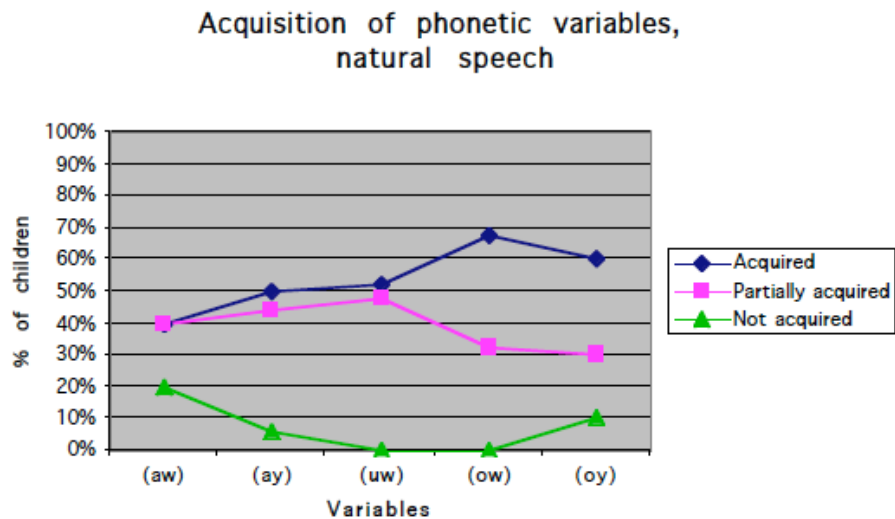


Figure 2.2: Acquisition of Philadelphia variables by children in King of Prussia, Pennsylvania (Data from Payne 1976:93, chart from Sankoff 3/17/2010 Ling. 501).

Her sample included 108 children and 51 adults, interviewed for 40 minutes to 2 hours. She interviewed parents together in longer interviews of 3-4 hours. Payne surveyed the following Philadelphia vocalic variables: the Philadelphia split short *a* system, fronting of (aw), centralization of (ayo), backing, raising, and rounding of (ahr), raising of (ohr) and merger with (uhr), raising of (oy), fronting of (uw) and (ow), and the merry/Murray merger. Depending on the origin of the families in her study, their original dialects share varying numbers of the same or similar features. However, none shared the same short *a* system, the merry/Murray merger, or centralization of (ayo). Payne found most of the phonetic variables to be only partially acquired, as shown in Figure 2.2. For each variable, she evaluated only children whose first dialect did not include that variable.

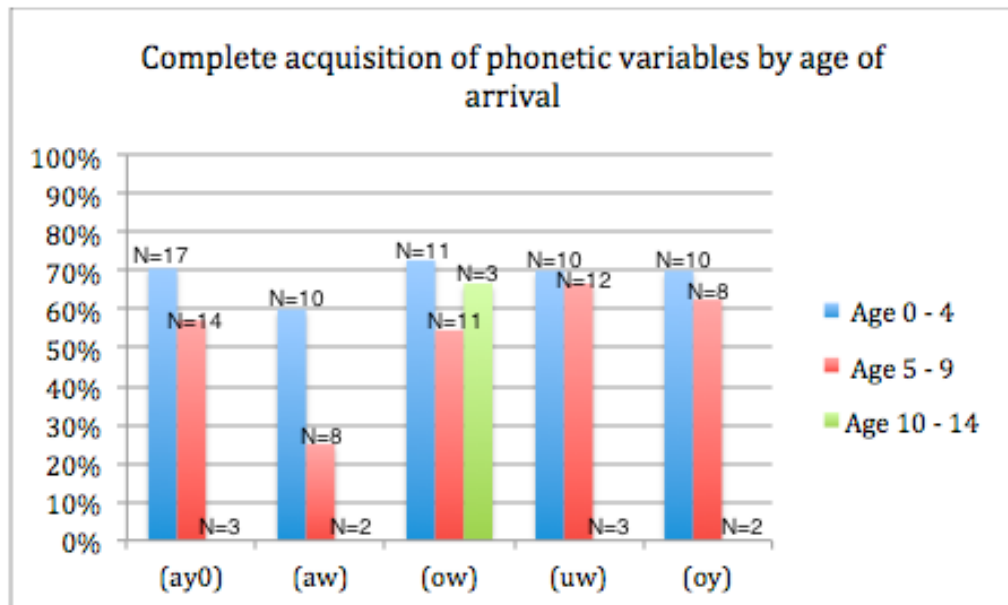


Figure 2.3: Percent of each age group that completely acquired the phonetic variables (Data from Payne 1976:114-8).

Payne found some effect of age of arrival on the degree to which children acquired these variables, for some variables more than others. These results are shown in Figure 2.3. Notably, children who arrived between ages 10 and 14 acquired very little of the Philadelphia variables. There was also a clear correlation between the number of Philadelphia variables acquired and the number of local peers each child had, with children who mentioned more local peers presenting more of the local dialect features successfully. Overall children were much more successful at acquiring the phonetic variables (those shown in Figure 2.3) than the phonological variables (short *a* system and mergers). Payne reported that almost all of the children in her study learned the phonetic variables at least partially (note that in Figure 2.3 percentages only represent the proportion of children who completely acquired each variable) (Payne 1976:212).

In a study of the acquisition of the Philadelphia dialect by 6 Philadelphia-born preschool children aged 3;4 to 4;10 in South Philadelphia, Roberts (1997b) analyzed three vowels undergoing change: (aw), (eyC), and (ayo). She found that all 6 children showed progress in acquiring the local system, though with individual variation. All children had acquired the fronting of (aw). The child Mike age 3;4, however, whose parents were native speakers of Italian, had not fully acquired the raising of (eyC) in closed syllables, or the raising and backing of (ayo) before voiceless segments (Roberts 1997b:254). Interestingly, Roberts notes that in Payne's (1980) study of the acquisition of Philadelphia vowels by children who had moved from other dialect areas, subjects had more difficulty acquiring (aw) than other vowels. Payne did not analyze (eyC), but she did find (ayo) to be easily acquired, also in contrast to Roberts' (1997b) results. Payne concluded that the acquisition of (aw) fronting may have been difficult due to the lack of this feature, as opposed to others, in her subjects' initial native dialects. She also suggested that more recent changes could be more difficult to acquire than farther advanced changes (evidenced by successful acquisition of the older changes of (uw) and (ow) fronting in her study).

In Roberts' study, (eyC) was acquired successfully by all children with native Philadelphian parents. However, neither Mike, mentioned above, nor Gia age 3;11, whose father was a native Philadelphian but whose mother was not, had fully acquired the native pattern for (eyC) (Roberts 1997b:255-7). Roberts also found that none of the children in her study had yet fully acquired (ayo), concluding that it was more difficult to acquire than the other variables analyzed. Both Payne (1980) and Roberts (1997b) also examined acquisition of the complex Philadelphia split short *a* system, and found that

only those children who had been born in Philadelphia, and also had two parents who were speakers of the local dialect, were able to fully acquire the pattern.

As Mike's parents spoke Italian at home, and he had only recently been enrolled in preschool, one would expect that he had not yet gained command of the Philadelphia dialect. However, Gia had been immersed in the dialect since birth, including local babysitters, extended family, and a year in preschool with local instructors. While Roberts observed that Gia sounded impressionistically like a typical Philadelphian, linguistic analysis showed that she had not fully acquired the local grammar (Roberts 1997b:260-1). In order to understand why none of the speakers in her sample had acquired raising and backing of (ayo), Roberts interviewed two of the children's mothers, and Gia's father very briefly, and found that the mothers did not show this feature of the Philadelphia dialect in their speech, while Gia's father did (Roberts 1997b:261). Thus we have examples of children who initially spoke different dialects, as well as a child who spoke a different language at home, and then encountered difficulty acquiring some of the variable features local to Philadelphia.

Roberts and Labov (1995:101) concluded that "...even the youngest members of the speech community are actively participating in ongoing sound change." They conducted a study of the acquisition of the Philadelphia short *a* system, which was and continues to be an ongoing change, with a group of 17 children aged 3;2 to 4;11, consisting of 10 girls and 7 boys. These children, who were all born and raised in Philadelphia, were interviewed multiple times over a period of 3 months. Thirteen of them had parents who were both born and raised in Philadelphia as well. For two of

them, information about their parents was not obtained; Gia, mentioned above in connection with Roberts (1997b), had a non-local mother, and Mike, also mentioned above, had parents born and raised in Italy. Mike had not acquired the short *a* system at all, and was excluded from group analysis. Roberts and Labov found that all remaining children in the sample had acquired the short *a* system quite well, with the exception of Gia, who had acquired the system with the exception of one environment: short *a* preceding /f/. In addition they found the children to be participating in the changes expanding the inventory of phonological contexts for tensing of *a*: the addition of following /l/ and following intervocalic /n/ as environments for tensing (Roberts and Labov 1995).

Johnson (2010) studied the spread of the low back merger, often referred to as the *cot~caught* merger, along a dialect boundary separating distinct and merged regions in eastern New England. He found that pre-school age children displayed the system of their parents. When their parents had different systems, children showed more influence from the parent of the same sex. Once they had entered the school system, children then displayed influence from their peer group, resulting in a shift to the merger even if one or both of their parents had the distinction. Some older school age children maintained their parents' distinction, based on not having encountered enough evidence of the merger among their peers at a young enough age. These different outcomes even co-occurred within families, where siblings of different ages could have the merger or the distinction. Johnson observed that "...merger can be acquired from peers and... it does not easily pass from younger to older children" (Johnson 2010:210).

Figure 2.4 shows children in Attleboro, where the low back merger has existed for a century, on the left, and children in South Attleboro, where the merger has recently spread rapidly but adults over age 20 mostly maintain the distinction.

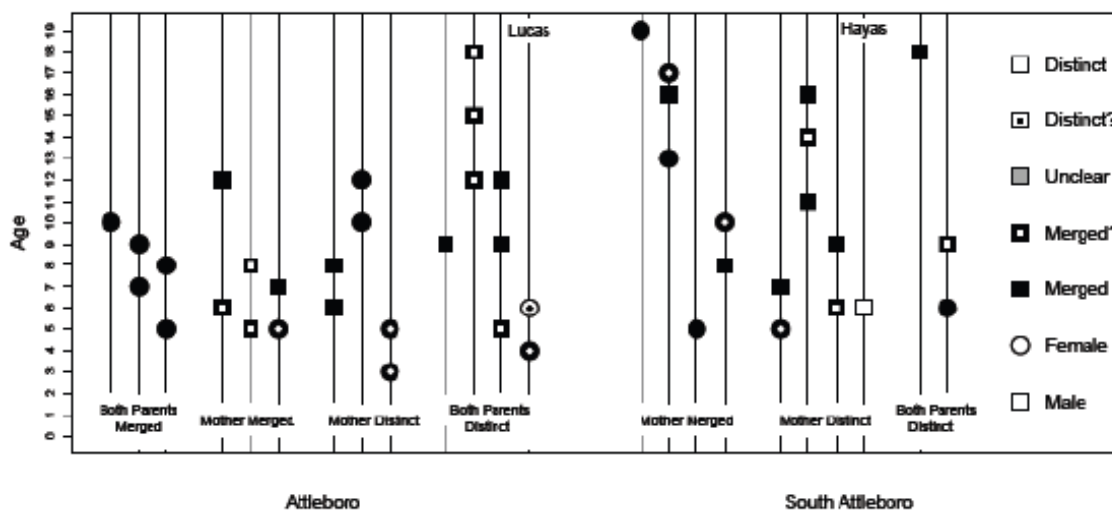


Figure 2.4: Status of the low-back merger for children and parents in Attleboro and South Attleboro, Massachusetts (from Johnson 2010:153).

Note that the symbol labeled as “Merged?” in the legend indicates speakers who are “probably merged.” All children are definitely merged only in those families where both parents are merged, showing parental influence in the spread of the merger to children. However, while not all children are definitely merged if one or more of their parents has the distinction, they are either probably or definitely merged, thus showing the influence of the peer group where the merger is dominant (Johnson 2010:153-4). Only one child is possibly distinct in Attleboro, who moved from a region without the merger halfway through kindergarten, one year prior to being interviewed. Meanwhile, her merged 4-year-old sister was in her first year of preschool in Attleboro at the time of interview, and had not attended school in the distinct region before the family moved.

Johnson says that the younger sister is more like her peers in Attleboro, while it is likely the peer exposure the older sister received prior to moving that has prevented her from acquiring the merger, or possibly caused a delay (Johnson 2010:153-4). Already in South Attleboro most children are definitely merged, and only one has the distinction. Johnson concluded that “After age 5 or 6, the underlying phonological vowel system is unlikely to change, although phonetic adjustment can occur” (Johnson 2010:211); hence the lack of acquisition of the merger, a phonological change, by older children.

2.3 Acquisition of stable variation

In cases of stable variation, children acquire their parents’ variable usage at a young age. Some internal and external constraints have been shown to be acquired as early as age 3, while others are acquired at later stages of language acquisition. In a study of child acquisition of (ing) for example, it appeared that stylistic constraints were stronger and acquired earlier than grammatical constraints (Labov 1989:96). However, Roberts found that for (-t,d) deletion children acquired phonological and grammatical constraints prior to social and stylistic constraints (Roberts 1997a). Roberts furthermore suggests that “variation is learned simultaneously with the related grammatical and lexical forms” (Roberts 2002:338). Stylistic constraints are also later translated from a limited range of at-home interactions and a limited selection of interlocutors to a wider range of interactions in school and other social contexts (cf. Roberts 1997a; Smith et al. 2007). Crucially, children learn constraints on sociolinguistic variation concurrently with, and in some cases preceding, the other categorical aspects of the grammar they are acquiring.

Results of research with children in King of Prussia showed that the stable variables (ing) and (-t,d) deletion were acquired between the ages of 4 and 9 (Labov 1989:96). These children matched their parents' variable usage of (-t,d) deletion and (ing) by age 7 (although some constraints on (-t,d) deletion were not yet fully acquired), with (-t,d) deletion already appearing in some form at age 4. Acquisition of (-t,d) deletion and (ing) also occurs before children have fully acquired some other categorical phonological and grammatical rules (Labov 1989:91-3).³ While one 7-year-old child in King of Prussia had already acquired his parents' stylistic and grammatical constraints on (ing), a 6-year-old in the same study had acquired only the stylistic constraints. Thus it appears that stylistic constraints on (ing) are stronger and acquired earlier than the grammatical constraints (Labov 1989:93). Figure 2.5 shows percent usage of the apical variant according to style and grammatical category for Cynthia, age 6, David, age 7, and Margie, age 9. Constraints on the variable usage of (ing) were not acquired as quickly as those on (-t,d) among the children in King of Prussia (Labov 1989:95).

³ Further discussion of the acquisition of (-t,d) deletion is reserved for Section 4.2.2.

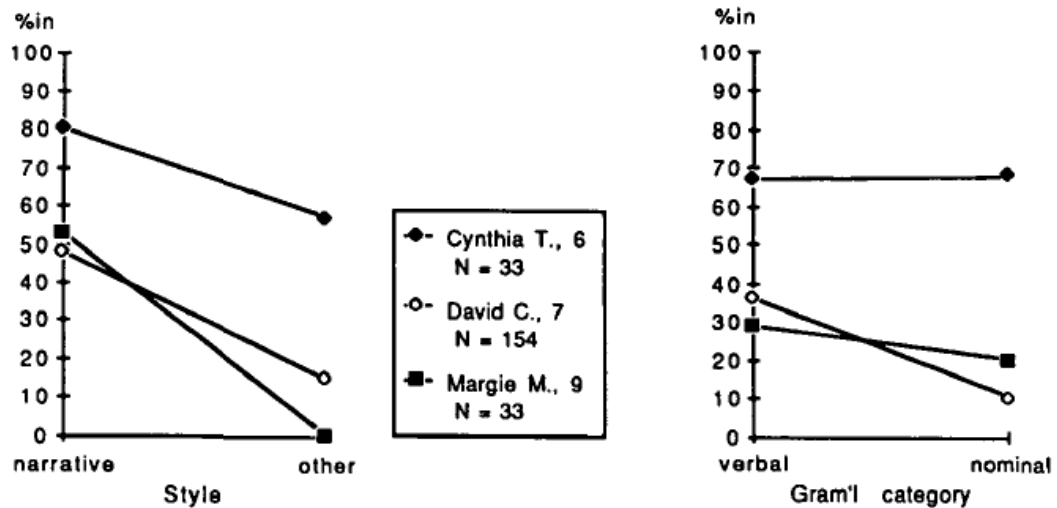


Figure 2.5: Percent apical variant of (ing) by style and grammatical category for three King of Prussia children (from Labov 1989:94).

Roberts (1994) found both grammatical and stylistic conditioning of (ing) among 3- and 4-year-old children. As a stylistic parameter, she compared speech directed to other children with speech directed to adults, and found that when speaking to other children her informants used more of the apical variant [ɪŋ], associated with informal styles in adult speech. In addition, she found that these children had already acquired grammatical constraints on (ing), using the apical variant more frequently in verbs and complements than in nouns and adjectives (Roberts 1997a:353).

Díaz-Campos (2001) found sociolinguistically conditioned variation in the deletion of intervocalic /d/ as in *cansado* 'tired', and the lateralization and deletion of syllable-final /ɾ/ as in *cansar* 'to tire', among young monolingual Spanish-speaking

children in Caracas, Venezuela.⁴ For this study he analyzed a corpus of child narrative speech including 30 children from age 3;6 to 5;9. He reported that from a very young age children assign sociolinguistic value, and apply internal and external constraints, to these two stable variables very similarly to the adults of their speech community. Díaz-Campos also found stratification by social class among the younger children in the sample, with lower-class children more likely to delete intervocalic /d/, as well as lateralize or delete syllable-final /ɾ/, while the class difference was greatly reduced or disappeared among the older children. He interprets this as a shift with age towards a school variety of language which favors retention of both phonemes, in concordance with the higher social status of the retained variants (Díaz-Campos 2001:175-7, 197-9). In further analysis of intervocalic /d/ in the same corpus, he found speech style to be a factor for deletion as well, but one that did not emerge until around age 4;6 (Díaz-Campos 2005).

Foulkes, Docherty, and Watt (2005) conducted a study of 20 boys and 20 girls aged 2;0 to 4;0 in the Tyneside region in northern England, who were all the first born children in their families. They also included the primary caregiver of each child, who was always the mother, and used a corpus of adult community speech for comparison. They recorded children with their mothers in 30-45 minutes sessions,⁵ in the presence of a researcher (Foulkes et al. 2005:182-3). They analyzed the variation of word-medial intersonorant /t/, as in *water* or *winter*, which varies between the standard [t], local

⁴ The latter is a common feature of Caribbean Spanish dialects, but unrelated to variation in syllable-final /ɾ/ in Mexico.

⁵ This amount of recording resulted in an average of 14.6 tokens per caregiver (Foulkes et al. 2005:186).

glottal forms, and some other rarely occurring variants. Foulkes et al. consider this variable to be a stereotype in the sense defined by Labov, such that speakers are overtly conscious of it, and it is imitated by outsiders as characteristic of local speech (Foulkes et al. 2005:186).

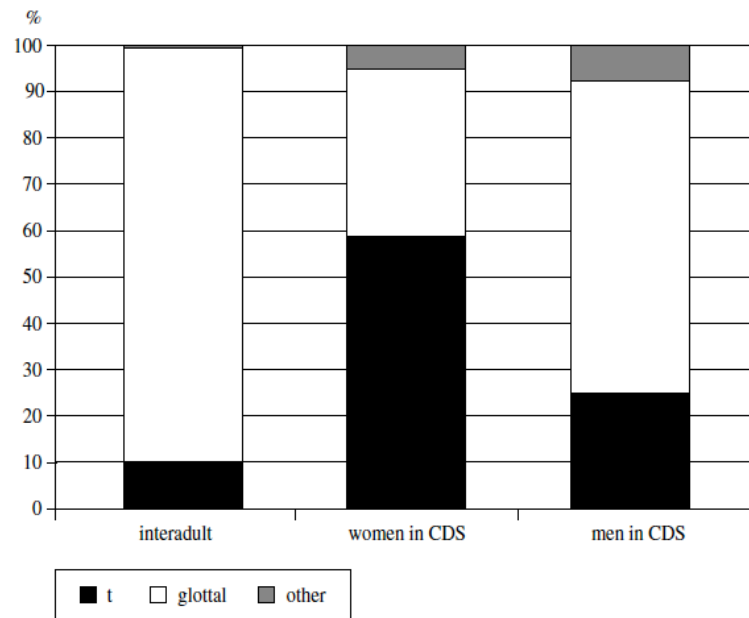


Figure 2.6: Variants of word-medial intersonorant /t/ in interadult and child-directed speech in Tyneside (from Foulkes et al. 2005:187). Note that interadult and child-directed speech were not collected from the same speakers.

In the inter-adult speech of young working-class women, Foulkes et al. found the standard variant [t] to be used only 10% of the time. However, women shifted to use [t] almost categorically in formal speech styles, while men did not (Foulkes et al. 2005:185-6). Meanwhile, women used [t] 59% of the time in child-directed speech, while men used it only 25% of the time, as shown in Figure 2.6.

Differences were also found in mothers' child-directed speech depending on the sex and age of their children. Mothers used more of the standard variant when speaking to girls, 70% of the time, and only 48% of the time with boys. Usage of the local variant by mothers also increased with the age of the children, for both girls and boys. These results are shown in Figure 2.7. Foulkes et al. also examined variation in word-final prevocalic /t/, which varies between standard [t], glottal forms, [d], and [ɫ]. They found similar differences between interadult and child-directed speech, and similar trends for child-directed speech depending on child gender and age (Foulkes et al. 2005:191-2).

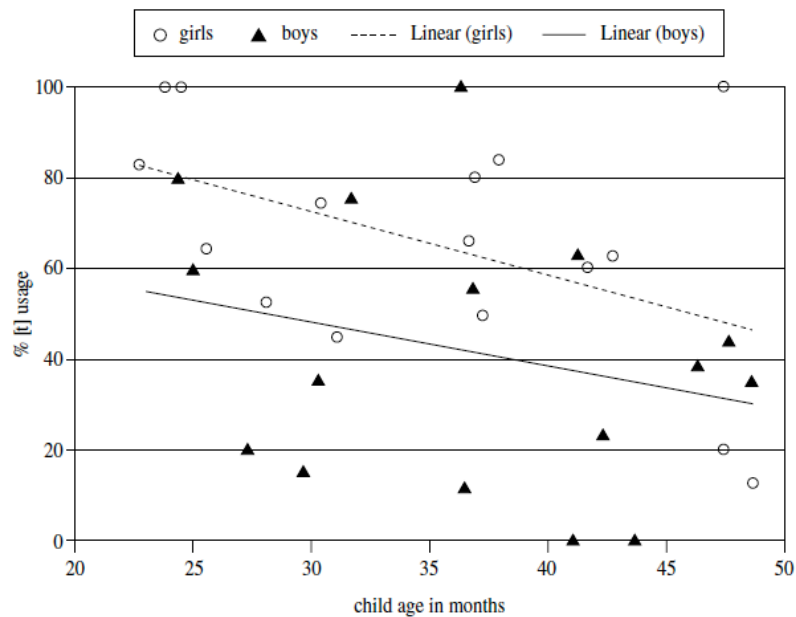


Figure 2.7: Usage of standard [t] in word-medial intersonorant position in child-directed speech in Tyneside: scatterplot of individual mothers with trend lines for child gender (from Foulkes et al. 2005:191).

Foulkes et al. conclude that mothers use more of the standard variant in speech to their children than to other adults. In addition, they use more of the standard when

speaking to female children, as well as to younger children. They also found men to modify their usage of these socially significant variables less than women, although they collected only small amounts of data for men as they were not the focus of the study (Foulkes et al. 2005:196). They thus conclude that child-directed speech provides children with “...opportunities to learn linguistic forms, their alternatives, and the social meanings of those alternatives” (Foulkes et al. 2005:200).

Smith et al. (2007) report on a study of the acquisition of local variable dialect features by children aged 2;6 to 4;0 in the small fishing town of Buckie on the northeast coast of Scotland. Their informants were 24 children and each child’s mother, of which 11 child-caregiver pairs were analyzed in the study. They selected children who had not yet entered preschool, and whose primary caregivers were their mothers. Children were only included in the study if both of their parents had been born and raised in Buckie. A corpus of adult community speech was also collected by Smith, who is from Buckie, in informal interviews with 19 men and 20 women.

The first variable analyzed is referred to as the *hoose* variable, characterized by variation between two vowel phonemes in a fixed class of lexical items, which varies somewhat depending on region. The local stigmatized variant is a monophthong /u:/, which varies with the standard diphthong /ʌɪ/. Previous studies had found this variable to be stratified according to social class, sex, and style (Smith et al. 2007:70-71). Analysis revealed a large difference between child-directed speech and interadult speech: Adults used the local variant categorically when speaking to other adults, but used the standard diphthong more than half the time when speaking to their children. Meanwhile each

child's usage reflected their caregiver's child-directed speech quite closely, as can be seen in Figure 2.8. The youngest children used the monophthong very infrequently, and frequency of use increased with age, suggesting that children may first acquire one form only (the standard); likewise frequency of the monophthong in child-directed speech increased with the age of the child. This is similar to the results for word-medial /t/ found by Foulkes et al. (2005).

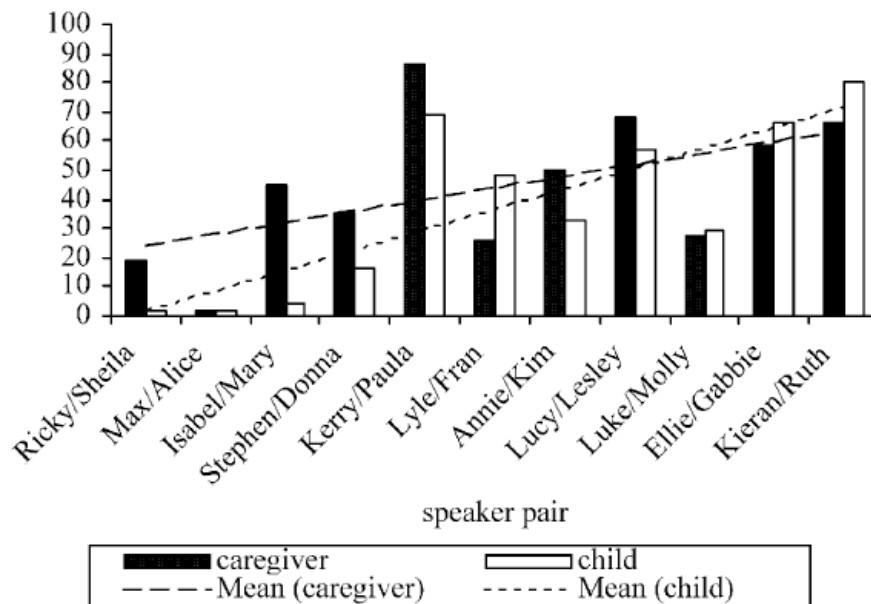


Figure 2.8: Overall frequency of monophthongal variant for *hooose* by child-caregiver pairs (from Smith et al. 2007:73).

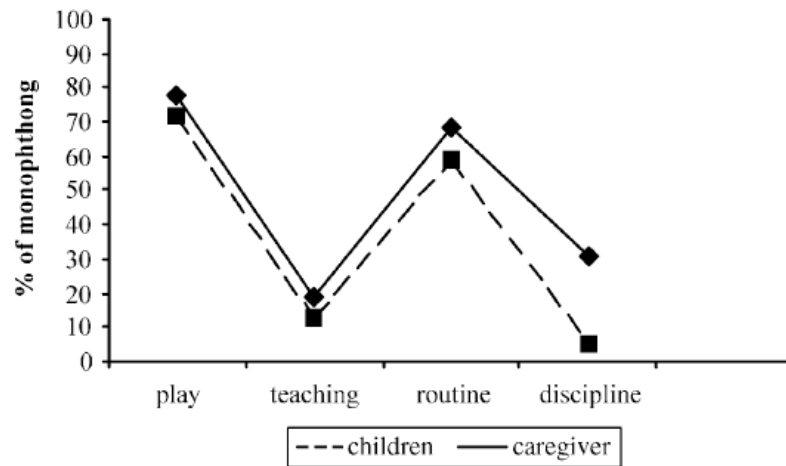


Figure 2.9: Percentage of the *hooose* monophthongal variant according to stylistic context (from Smith et al. 2007:75).

Unlike results from other studies of this variable in adult speech, no sex difference was found for children. Stylistic contexts were defined according to the following interactions: play, routine, teaching, and discipline. In play and routine, which were expected to be the less formal contexts, both caregivers and children indeed used higher rates of the monophthongal variant, and patterned very closely to each other, as can be seen in Figure 2.9. There is only one child in the study who does not follow the stylistic constraints on *hooose*, and this is clearly due to her mother's lack of stylistic stratification in child-directed speech, also unique among the caregivers (Smith et al. 2007:72-9).

Next, Smith et al. analyzed the use of verbal *-s* in 3rd person plural contexts, also known as the Northern Subject Rule. They found that children had already acquired an important categorical constraint on this variation: *-s* may occur only with NP subjects, but not the pronoun *they*. As for *hooose*, children matched their caregivers' usage in child-

directed speech very closely. However, in this case caregivers' child-directed speech also matched the adult community norms. Even the youngest children who only used the standard variant of *hoose* used non-standard 3rd person plural verbal -s. Yet there was a lack of stylistic stratification for both caregivers and children, and no significant correlation between child and caregiver usage. Smith et al. suggest that caregivers are not consciously aware of this variable and thus do not overtly modify it depending on whether they're speaking to other adults or to their children, or according to stylistic context, "Thus, they are unable, at least overtly, to help the children acquire sociolinguistic competence" (Smith et al. 2007:91). In sum, children in Buckie acquired sociolinguistic competence along with grammatical competence for *hoose*, while grammatical constraints preceded social and stylistic constraints for verbal -s (Smith et al. 2007:80-90).

It is clear from these studies that not all variation is learned at the same rate or stage of language acquisition, and that the order of acquisition of grammatical and social constraints depends on the variable. Both Foulkes et al. (2005) and Smith et al. (2007) found mothers to use different frequencies of variable forms with their children depending on the child's gender and age. Although these studies examine stable variation, if this caregiver behavior also occurs for variables undergoing change, it could be a source of cues for children to identify and interpret sociolinguistic variation in the absence of evidence from multiple generations of a speech community.

2.4 Issues in bilingual acquisition

2.4.1 Cross-linguistic interference

Previous debates in bilingual acquisition focused on the question of whether bilingual children began by acquiring one or two language systems. It is a currently accepted view that they acquire two language systems from the early stages of language acquisition (Ingram 1981-2, Johnson and Lancaster 1998, Deuchar and Quay 2000, Paradis and Navarro 2003, Genesee 1989, Meisel 2004).

A matter still under study is the existence and extent of cross-linguistic influence between the bilingual child's two languages. Studies have shown temporary systematic structural influence of one language on another in several linguistic domains (cf. Hulk and van der Linden (1998), (Müller 1998), Döpke (1998, 2000), Yip and Mathews (2000), and Müller and Hulk (2001) for syntax; Paradis (2001) for phonology; Nicoladis (2002) for morphology). Likewise studies have also sometimes found a lack of cross-linguistic interference (cf. Paradis and Genesee (1996,1997), Hulk and Müller (2000)).

One theory is that structural areas in which a bilingual child's two languages overlap are the ones where interference is most likely to be observed. It has also been argued that structural ambiguity in one language makes such areas vulnerable for interaction from the other language (Meisel 2004:102). The finding that some linguistic domains are available to cross-linguistic interference in bilingual learners, while some are not, is crucial to the point that bilingual children are acquiring two language systems;

any cross-linguistic interference must be systematic and restrained if there are two separate language systems (Paradis and Navarro 2003:372).

Fantini (1985) studied the simultaneous bilingual acquisition of Spanish and English by a child named Mario from birth to age 10. Mario grew up in a Spanish-speaking household in Vermont, where he spoke English at school and in other contexts outside of the home. Mario provides an apt comparison for many children in the Mexican immigrant community of Philadelphia. His initial period of language acquisition was characterized by Spanish input, and the acquisition of English began when he entered the school system (Fantini 1985:134-5). Fantini concluded that Mario had almost completed acquisition of the Spanish phonological system by the time he began learning English (Fantini 1985:140). Fantini observed, between ages 2;6 and 3;0, that Mario's acquisition of the English lexicon was more rapid than his acquisition of its phonological system, such that his first English words were adapted to his Spanish phonemic inventory and phonological system (Fantini 1985:134-5). Overall, Fantini found that the interference of Spanish in Mario's English was almost entirely resolved by age 5. English final consonants in particular took longer for Mario to acquire than other phonemes (Fantini 1985:136). It was not until age 8 that all traces of foreign influence had disappeared from Mario's English speech. Meanwhile, throughout his acquisition of both languages, only very rare examples of the influence of English phonology appeared in Mario's Spanish, including some aspiration of voiceless stops (Fantini 1985:139-40).

Null subject realization is a common domain where influence from English on the Spanish of bilinguals has been observed. It is also a domain where cross-linguistic

interference is predicted to be likely in bilingual acquisition, because it is linked to the pragmatics/syntax interface (Paradis and Navarro 2003:371). In Spanish the expression of subjects is optional, depending on grammatical factors including discourse-pragmatic context, as well as regional dialect differences. For Spanish-speaking adults, the rate of overt subjects in declaratives in natural conversation is estimated to be on average around 30% (from Grinstead 2000).⁶ Meanwhile, overt subjects are obligatory in English with the exception of the imperative and a few other “marginal” contexts. Considering that Spanish and English can both have overt subjects, and are both SVO languages, this is a reasonable potential locus for cross-linguistic interference (Paradis and Navarro 2003:375).

Paradis and Navarro (2003) conducted a study of the acquisition of null subject variation using CHILDES data for two Spanish monolingual children (ages 1;8-2;7 and 1;8-1;11), one Spanish-English bilingual child (age 1;9-2;6), and their parental interlocutors. Their study explored the influence of parental input as well, which had not received much attention in previous studies of this type (Paradis and Navarro 2003:374). They found higher rates of overt pronouns for the bilingual child, which they concluded could be due to effects from English, but possibly also to the child’s adult input (Paradis and Navarro 2003:371-2).⁷

⁶ Although considerable variation in frequency exists between regional dialects.

⁷ Although it was not a study of child acquisition, Otheguy and Zentella (2012) also found influence of English on null subject realization in Spanish. In a comprehensive study of speakers of six dialects of Spanish in New York City, Otheguy and Zentella found both regional leveling between Spanish dialects, as well as influence from English, on the rates of overt pronoun use (Otheguy and Zentella 2012).

2.4.2 Reduced input

Johnson, in his study of the spread of the low back merger, observes that “Younger children generally learn new patterns better, but there are no absolute rules for acquisition under various conditions of exposure” (Johnson 2010:210). One matter to consider with respect to the exposure children in this study receive in Spanish (and English) is that they will necessarily receive less input in each language than a monolingual speaker would during the critical period for language acquisition.

Silva-Corvalán (2003) examined the effect of reduced input on language acquisition for Mexican American bilingual learners in Los Angeles. She analyzed the speech of 7 children, ages 5;1 to 5;11, all of whom acquired Spanish from birth and English from birth or later, who differed with respect to how much Spanish and English were spoken at home. She found that children who spoke only Spanish at home were more advanced in their acquisition of the Spanish tense-mood-aspect system than children from bilingual homes, who were more advanced than children from English-only homes. In addition to the quantity of Spanish input, Silva-Corvalán suggests that the quality of input, limited to speech contexts for toddlers and preschool children which commonly refer to definite rather than hypothetical future events, also accounts for the children’s acquisition patterns (Silva-Corvalán 2003:375, 381). She concludes that for some speakers, an interruption in the process of acquisition of Spanish between ages 3 and 5 (specifically when English becomes used more in certain contexts of daily life), will result in the reduced acquisition of the Spanish tense-mood-aspect system (Silva-Corvalán 2003:395).

In a study of several aspects of Spanish language proficiency among children of Mexican descent in northern California, Pease-Alvarez, Hakuta, and Bayley (1996) concluded that “...the type of exposure and the social context in which it occurs are of greater importance than simple amount of exposure...” to bilingual acquisition.

2.4.3 Language change and variation in a bilingual community

Silva-Corvalán, in her 1994 study of Spanish among Mexican-Americans in Los Angeles, concludes that in a language contact situation, changes with both internal and external motivation occur. Those changes that are internally motivated have the following conditions: “(a) they are in progress in the ‘model’ monolingual variety before intensive contact occurs and/or (b) they may be spurred by such features as the semantic opaqueness of certain language specific forms or the relative complexity of a given paradigm” (Silva-Corvalán 1994:92). In the current study, the frication of /ɾ/ is an example of the case in (a); analysis will examine whether this internally motivated change in Mexican Spanish continues to advance in the Philadelphia immigrant community.

Silva-Corvalán found that simplification and loss of verb tenses progressed with newer generations, even for those who were advanced Spanish speakers, so that attrition from dominance in English was not a possible explanation. Other internally motivated changes in Spanish examined in her study were the extension of *estar* ‘to be’, and the variable placement and omission of verbal clitic pronouns. Silva-Corvalán also reported that even in the case of an internally-motivated change, language contact could have the

effect of increasing the rate of diffusion of the new systems involved in change (Silva-Corvalán 1994:92).

The change in *estar*, which consists in its use in innovative semantic and syntactic contexts replacing the verb *ser* ‘to be’, had also been observed in other Mexican-American and monolingual Spanish communities, so it clearly could not be attributed entirely to contact with English in Los Angeles (Silva-Corvalán 1994:105). However, the change was more advanced in the Mexican-American community than in areas studied in Mexico (Silva-Corvalán 1994:114). Silva-Corvalán attributes a possible accelerating influence to the change from the structure for progressives in English; the extension of *estar* in this context and a consequent association with English *be* may have influenced faster diffusion to the predicate adjective context. The innovative use of *estar* is exemplified in (1), where the conservative variety would use *es* ‘is’ from *ser*, rather than *está* ‘is’ from *estar*.

- (1) *Si el hombre está/es soltero, puede hacer lo que quiera.*

‘If the man is unmarried he can do whatever he pleases.’

(Silva-Corvalán 1994:112)

Although English has only one verb *be* corresponding to Spanish *estar* and *ser*, Silva-Corvalán found no evidence that the Los Angeles Spanish system would converge to one Spanish form under influence of English in the future (Silva-Corvalán 1994:119).

3 THE SPANISH OF CENTRAL MEXICO AND VARIABLES UNDER STUDY

3.1 The Spanish of Central Mexico

3.1.1 Dialect region

Hidalgo (1996) provides the clearest description of dialect boundaries in Mexico.⁸ She presents both macro-dialectal regions, as well as more detailed dialect regions. Much discussion of the features of Mexican Spanish makes reference to Central Mexico as a dialect region. Although finer regional distinctions are preferable for this analysis, Figure 3.1 shows the macro-dialectal regions, including the Central dialect region as a point of reference for studies that refer to it.

⁸ Lipski (1994) reports that there is not a universally accepted division of Mexican dialects, though some commonly recognized dialect areas include a northern-southern distinction, the region of Mexico City, the Yucatán, a Caribbean coastal region including the states of Veracruz and Tabasco, a Pacific coastal region, and Oaxaca (Lipski 1994:294-5).

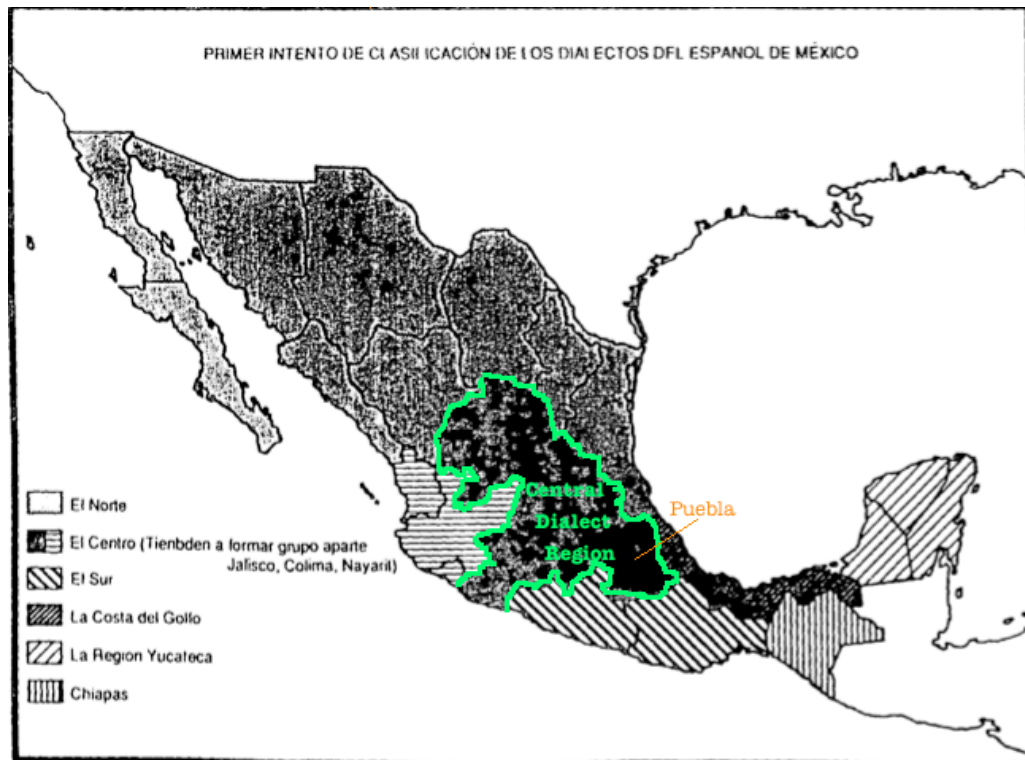


Figure 3.1: *Primer Intento de Clasificación de los Dialectos del Español de México* 'First attempt at a Classification of the Dialects of Mexican Spanish' (from Hidalgo 1996, indication of central dialect region and Puebla added).

Figure 3.2 shows finer distinctions for dialect regions. In this map, the *Altiplano meridional* 'Southern Highlands' includes Mexico City as well as much of the state of Puebla; notably, this region covers the parts of Puebla where many residents of South Philadelphia originate. The state of Puebla also covers small parts of the *Zona veracruzana* 'Veracruz zone', and *Zona de transición* 'Transitional zone'.

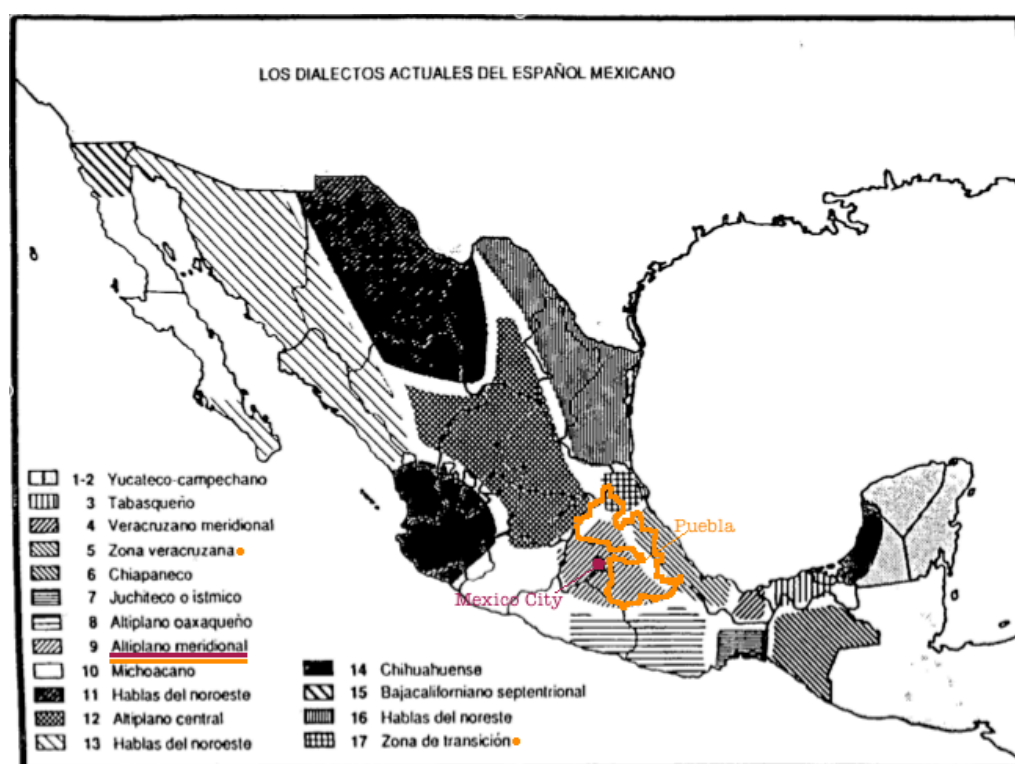


Figure 3.2: *Los Dialectos Actuales del Español Mexicano* ‘The Current Dialects of Mexican Spanish’ (from Hidalgo 1996, indication of Mexico City and Puebla added).

3.1.2 Dialect features

I provide here some background on certain linguistic features that are often used in dialect descriptions of Spanish, as they present in the Spanish of Central Mexico.

In Mexican Spanish in general, including the Central Mexican region, the following are some lexical usages of note: *qué tanto* ‘how much’ and *qué tan* ‘how [+adj.]’ rather than *cuánto* and *cuán*; *ándale* for *vamos* ‘let’s go’, *de acuerdo* ‘okay’ (in agreement), and *de nada* ‘you’re welcome’; *órale* to mean *vamos* ‘let’s go’ or *venga* ‘come on’ (Lipski 1994); *platicar* rather than *hablar* ‘to speak’; and *hablar* to mean *llamar* ‘to call.’

In the realm of morphology, Central Mexico, like most of Mexico, is a dialect region characterized by *tuteo*, or use of the 2nd person singular pronoun *tú* (Lipski 1994). The diminutive suffix *-ito* predominates, again as in most of Mexico (as opposed to suffixes such as *-illo* or *-ico* in other dialect regions) (Lipski 1994). Though it may not be commonly mentioned as a Mexican dialect feature, an alternation in the 2nd person singular preterit verb form characterized by the addition of *-s* to the end of the standard inflection also occurs in Central Mexican Spanish; the preterit alternation is one of the variables analyzed in this study and will be discussed in Section 3.3.

In terms of phonetic characteristics, dialect regions of Mexico with the exception of coastal regions rarely present aspiration and deletion of /s/, a widely studied phenomenon in many dialects of Spanish. In fact, Lipski calls the /s/ in Central Mexico in particular “extraordinarily resistant,” and possibly related to the influence of the indigenous Nahuatl language in the region (Lipski 1994:300). The phoneme /x/, as in *México*, is pronounced as a velar fricative. Unstressed vowels are often reduced or deleted, as in the pronunciation of *ahora* ‘now’ as [‘ora] rather than [a‘ora]. Mexican Spanish in general is *yeísta*, meaning that the palatal lateral approximant phoneme /λ/, historically spelled with *ll* as in *tortilla*, has merged with the palatal affricate /j/, historically spelled with *y* as in *ya* ‘already, now’. Furthermore, in Central Mexican Spanish, Lipski (1994) reports that /j/ is pronounced as a palatal fricative [j] (as opposed to a palatal affricate [tʃ] or palatal approximant [ɰ] in other dialect regions). Finally, the second variable feature of Central Mexican Spanish analyzed in this study is

the frication or assibilation of the voiced alveolar flap /ɾ/ in syllable-final position; this variation is reported by Lipski (1994) and others, and will be discussed in Section 3.2.

3.2 Variation in syllable-final /ɾ/

3.2.1 Description of the variable

Accounts of variation of the Spanish voiced alveolar flap /ɾ/ differ in the envelope of variation as well as the phonetic variants reported. Some studies report variation only in word-final position as in *hablar* ‘to speak,’ some in all syllable-final positions as in *porque* ‘because,’ and some in word-initial and intervocalic positions as well, as in *rojo* ‘red’ or *oro* ‘gold.’ Some studies describe the variation as assibilation of /ɾ/, while some describe it as frication; still others describe both assibilated and fricated variants, or the co-occurrence of assibilation and frication in one variant. Lipski reports that syllable-final /ɾ/ is often pronounced as a voiceless sibilant, “almost like [s],” throughout southern and central Mexico (Lipski 1994:300, 2008:86). According to some descriptions, assibilation or frication of /ɾ/ occurs in all syllable-final positions, and most frequently in word-final position preceding a pause (Moreno de Alba 1994, Perissinotto 1975). Moreno de Alba reports that a fricated variant is the most frequent allophonic realization of word-final pre-pausal /ɾ/, followed in frequency by the assibilated variant, and lastly a trill [r] (Moreno de Alba 1994:126-134). He further proposes that assibilation of /ɾ/ is a process that follows frication; i.e., assibilation operates on the fricated variant, not directly on the flap /ɾ/. Perissinotto (1975:63) in fact refers to the non-standard variant as a “fricative assibilated” /ɾ/, while Matus-Mendoza (2004) calls it a “voiceless

assibilated fricative,” and Rissel (1989) counts among the “assibilated variants” of /ɾ/ a voiced assibilated fricative, a voiceless assibilated fricative, and a voiced assibilated trill. The Atlas Lingüístico de México (ALM) details the greatest number of variants for syllable-final /ɾ/ (Lope Blanch 1990). Table 3.1 gives the phonetic symbols and definitions of the phonetic realizations of /ɾ/ that are reported in word-final pre-pausal, word-final pre-vocalic, and syllable-final word-internal position, in the locations surveyed in the state of Puebla.

Phonetic symbol	Phonetic description
r	flap
ɾ	assibilated flap
ɽ ^(v)	slightly assibilated flap
ɽ̥	voiceless assibilated flap
ɸ	fricative flap
ɽ̠	retroflex flap
ṛ	trill
ṛ̥	fricative trill
ṽṛ̥	voiceless assibilated trill
ṽṛ̥̥	voiceless trill

Table 3.1: Phonetic realizations of syllable-final /ɾ/ reported in the state of Puebla in the Atlas Lingüístico de México.

None of the above accounts of variation of /ɾ/ specify a phonetic feature description of the reported variants. Lacking such description, it is not clear what the difference between a sibilant and fricative variant of /ɾ/ is meant to be, as these categories overlap. The closest thing to a feature description of this variable may be in Harris' 1969 work on Spanish phonology, for which the data was drawn from speakers

originating in Mexico City. Harris reports that /ɾ/ is produced “erratically” in pre-pause position as a “voiceless apical fricative,” similar to [s] but slightly more retracted, differing from [ɾ] in the feature specifications +obstruent, –anterior, and +strident (Harris 1969:47).⁹ Considering this, and based on an examination of my own data to be discussed further in Chapter 5, I will refer to one process of ‘frication of /ɾ/’ and refer to the variant as ‘fricative /ɾ/,’ except when citing another author’s description. I will use the symbol [ɾ̥], the phonetic notation for a fricative flap variant used in the ALM (Lope Blanch 1990).

3.2.2 History and geographic distribution

For the purposes of establishing the presence of the fricative /ɾ/ variable in the relevant area in Mexico, the map in Figure 3.3 shows where instances of non-standard variants of word-final /ɾ/ in pre-pausal position occurred in the state of Puebla, in data from the ALM. Data in the ALM was collected over a period from 1970 to 1979, with a minimum of seven informants varying in age (18 years and older), sex, and educational level interviewed at each geographical location (Lope Blanch 1990). All and only data points in the state of Puebla from the ALM are shown, indicated with star icons: Metlatoyuca, Huauchinango, Tetela, Teziutlán, Ciudad Serdán, Tehuacán, Acatlán, Tepeaca, the city of Puebla, and San Martín Texmelucan. Fricative and/or sibilant variants of /ɾ/ are in fact

⁹ While Harris’ focus was not a study of variation, and he did not relate this variant to any previous studies of assibilation or frication of /ɾ/, considering the origin of his informants it is likely that this was the variation he observed.

reported at all of the Puebla ALM data points. The four towns of origin of the six adult participants in this study are also indicated in Figure 3.3 with house icons.



Figure 3.3: Presence of the fricative variant of /r/ in word-final pre-pausal position in the state of Puebla (ALM data from Lope Blanch 1990).

Moreno de Alba (1994) reported on /r/ in the same—word-final pre-pausal—phonological context. The map in Figure 3.4 shows the regions throughout Mexico that he determines to present “somewhat frequent” assibilation of /r/.

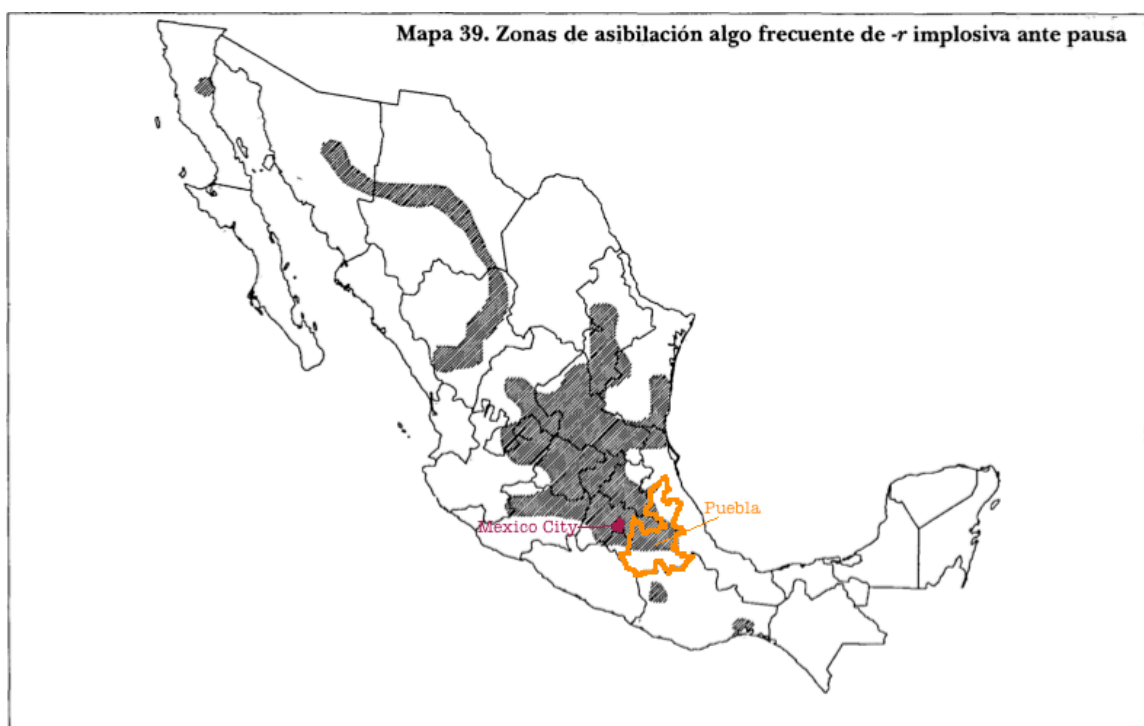


Figure 3.4: *Zonas de asibilación algo frecuente de -r implosiva ante pausa* ‘Zones of somewhat frequent syllable-final pre-pausal -r assibilation’ (from Moreno de Alba 1994, indication of Mexico City and Puebla added).

Matus-Mendoza reports that /r/ assibilation in word-final position originated in Mexico City with both voiced and voiceless assibilated variants, also calling it a “relatively new phenomenon” (Matus-Mendoza 2004:17). She characterizes the assibilated variant as urban and prestigious (Matus-Mendoza 2004:22). Data from the ALM published in 1990 show a large region covering central Mexico displaying /r/ assibilation in word-final pre-pausal position, though documentation of this feature in Mexico is relatively recent according to Moreno de Alba (1994:127-9). Moreno de Alba (1994:130) also reports that the highest rates of /r/ assibilation are found in the interior highland region of the country, which likely corresponds to the Central Highland and Southern Highland regions defined by Hidalgo (1996). Rissel (1989) reports on /r/

assibilation in the city of San Luis Potosí, which is within the Central dialect region. Perissinotto observes /ɾ/ assibilation in Mexico City, located within the Southern Highlands and also within the Central dialect region (Perissinotto 1975:63-4). Bowman (1960) reports that, in the city of Guanajuato, also in the Central dialect region north of the Southern Highlands, /ɾ/ assibilation was first found to occur sometime between 1948 and 1952 (Lope Blanch 1972:82). Matluck (1952) reported frequent assibilation of final /ɾ/, as well as occasional frication, in Mexico City. However, Rissel (1989) reports that the first observation of /ɾ/ assibilation was recorded in 1896 in Mexico City, by Marden (1938). The map in Figure 3.5 summarizes the specific cities where frication or assibilation of /ɾ/ has been reported in the literature, and indicates the region of origin of the Philadelphia Mexican immigrant community.



Figure 3.5: Studies of frication or assibilation of /ɾ/ in Mexico (Matluck 1952; Lope Blanch 1972; Perissinotto 1975; Rissel 1989; Matus-Mendoza 2004).

More than one account of /ɾ/ frication or assibilation has identified characteristics of the variation that suggest a change in progress, moving in the direction of increased frequency of /ɾ/ frication or assibilation. The non-standard variants have been described as more frequent for women, as is common for a change in progress, and for younger speakers, allowing for an apparent time interpretation of change (Cárdenas 1958; Lope Blanch 1972; Matus-Mendoza 2004; Moreno de Alba 1994:130; Perissinotto 1972, 1975; Rissel 1989). It should be noted that the most recent of the reports of this variation draws on data from 1995-6 (Matus-Mendoza 2004), so it cannot necessarily be assumed that /ɾ/ frication continues to change in the same direction today in Mexican Spanish. Studies of /ɾ/ frication that reported quantitative results are discussed in further detail in the following section.

3.2.3 Quantitative studies

In Moreno de Alba's (1994) discussion of ALM data showing /ɾ/ assibilation in word-final pre-pausal position in Central Mexico, he reported rates of frication at 40% and higher. Perissinotto found rates of /ɾ/ assibilation of 68.1% in word-final pre-pausal position on average in Mexico City in a study conducted from 1963-9 (Perissinotto 1972, 1975:63-4). Perissinotto observed considerable differentiation according to sex in Mexico City, reporting around 80% assibilation for women and only around 40% for men, higher rates of assibilation among younger speakers, as well as the highest rates in the middle socioeconomic class, as is characteristic of a change from below (Perissinotto 1972:73-4, 1975:74).

Rissel (1989) conducted a study with 56 speakers aged 12-22, in San Luis Potosí, a city north of Mexico City in the state of San Luis Potosí in the Central Highland region, where she said that assibilation of /ɾ/ was a change in progress. She found /ɾ/ assibilation to occur most frequently in syllable-final position preceding a pause, but also infrequently in variation with the trill [r] in word-initial and intervocalic position; Rissel considered the assibilation of the trill to be an incipient change. She concluded that /ɾ/ assibilation had begun among women in middle and upper social classes in San Luis Potosí, and came to be a marker of gender in lower classes (Rissel 1989:269). She found assibilation of /ɾ/ to occur in middle and lower social class groups among women, and in middle and upper class groups among men (Rissel 1989).

	% [ř]	N
Women	37%	?
Men	13%	?
Total	? %	802

Table 3.2: Frequency of assibilated variants of /ɾ/ in word-final pre-pausal position in San Luis Potosí, Mexico (percentages approximated from chart in Rissel 1989:276).

Matus-Mendoza (2004;2005) reports on assibilation of /ɾ/ in Moroleón, in the state of Guanajuato to the northwest of Mexico City, as well as among migrants from Moroleón who work on mushroom farms in Kennett Square, Pennsylvania, from a study conducted in 1995-6. Based on an apparent time interpretation of three generations of speakers in Moroleón, Matus-Mendoza concludes that assibilation of /ɾ/ represents a change in progress in the direction of increasing assibilation; the youngest generation uses the “voiceless assibilated fricative” variant, which Matus-Mendoza represents with

[ɾ], in word-final position at a rate of 20%, up from 7% for their grandparents' generation.

Table 3.3 shows frequencies of [ɾ] in word-final position by following segment in Moroleón, Mexico. Matus-Mendoza states that this variant came from Mexico City to the state of Guanajuato, as well as to Kennett Square, PA via Moroleón. She also reports a significant effect of infinitive verbal endings for data collected in Moroleón, with 14% [ɾ] in infinitive endings, and 8% [ɾ] in other instances of word-final /ɾ/. Finally, she reports effects of sex and level of education both in Kennett Square and Moroleón, with women using more [ɾ] than men, and frequency of [ɾ] increasing with level of education. In Kennett Square, Matus-Mendoza reports that women assibilate at a rate of 10% while men assibilate at a rate of 2% (Matus-Mendoza 2005).

Following Segment	% [ɾ]	N
Vowel	8%	1136
Consonant	12%	1480
Pause	44%	180
Total	12%	2796

Table 3.3: Frequency of word-final [ɾ] by following segment in Moroleón, Mexico (data from Matus-Mendoza 2004:21).

Matus-Mendoza then found that migrants who returned from Kennett Square to Mexico used less of the assibilated variant than residents of Moroleón who had not emigrated. Although women continued to assibilate more frequently than men in Kennett Square, they assibilated much less frequently (6%) than women living in Moroleón (24%). She suggests that the migrants in Kennett Square abandon those forms with urban prestige such as the assibilated /ɾ/ due to a disconnect from urban centers in

Mexico, leading to the disappearance of the preexisting regional and generational linguistic differences in their Spanish (Matus-Mendoza 2004:18). Specifically, she concluded that speakers in Kennett Square were in the process of reversing a trend in Mexico of increasing frequency of assibilation (Matus-Mendoza 2004:18,23).¹⁰

Lastra and Butragueño (2006) conducted a study of the assibilation and frication of the flap and trill in all word positions in Mexico City, with data from 54 informants collected in 2004 and 2005.¹¹ They also found the middle social class and women to favor assibilation and frication. They suggest that assibilation of /ɾ/ may be retreating in Mexico City, based on apparent time data showing lower rates in younger speakers, as well as real time comparison with previous studies (Lastra & Butragueño 2006:20).

3.2.4 Issues for L1 and bilingual acquisition

No linguistic studies have focused on the child acquisition of variable frication of /ɾ/ to my knowledge. However, relevant information about the developmental stages of Spanish L1 and bilingual acquisition is discussed below.

In his discussion of the bilingual acquisition (Spanish and English) of his son Mario growing up in Vermont, Fantini reports that for children acquiring Spanish the

¹⁰ The question remains of, if migrants in Kennett Square are moving away from a local feature, to what are they moving towards? Matus-Mendoza (2002:21) reports that Mexicans made up 30% of Latinos in Kennett Square according to the 1990 census. Considering this, a natural question is whether migrants from Moroleón could be influenced by contact with other Spanish dialects. While Matus-Mendoza says that Puerto Ricans tend to work as supervisors on the mushroom farms, she makes no mention of other Latino populations on the farms, nor does she discuss dialect contact (Matus-Mendoza 2002:23).

¹¹ The time of data collection is not stated explicitly by Lastra and Butragueño (2006) but deduced from their discussion and date of publication.

trill /r/ is well known to be one of the last phones acquired, and that children are not normally capable of producing the distinction between the trill [r] and the flap [ɾ] until almost age 5, although there are known exceptions (Fantini 1985:131,189).¹² Díaz-Campos on the other hand reports that children acquiring Spanish are able to realize the flap as [ɾ] by age 2;8, based on a corpus study involving 30 children in Venezuela (Díaz-Campos 2001:183). Hernández Pina (1984) reported that her son Rafael began producing [ɾ] at 22 months in syllable-initial position and at 32 months in syllable-final position. Though she does not give an age at which his production of [ɾ] stabilized, she does say that during the period of acquisition of the flap, which extended past age 3, he alternated between [ɾ] and Ø (cited in Díaz-Campos 2001:78, 81). In a study of 55 monolingual children aged 2;0 to 6;5 acquiring Spanish in the Dominican Republic, De la Fuente (1985) observed children to begin producing [ɾ] at age 3;0, and to master its production by age 5;0 (cited in Díaz-Campos 2001:82). In Mario's case, Fantini found that the trill and flap phonemes of Spanish were the latest he acquired. At age 4;11 Mario began to use the trill correctly, while also substituting it for the flap. By 5;1 he had acquired the distinction and began producing [ɾ] as well. However, at age 5 he still occasionally "lost control" of the trill, producing some word-initial and word-medial alternation with [ɾ] in words such as *rojo* 'red' [roho~ roho] and *carro* 'car' [karo~karo]. Though he gives some examples of syllable-initial flap /ɾ/ pronounced as [j] and one example of a word-final flap pronounced as [l] at age 4;6, Fantini does not otherwise

¹² Fantini conducted a longitudinal study of Mario from birth to age 10. Mario's mother was Bolivian, and grew up in Bolivia, Argentina, Peru, and Venezuela. Fantini was born in Philadelphia, and grew up speaking English and Italian. Mario's parents spoke mostly Spanish in the home.

discuss what phones Mario produced in place of the flap prior to acquiring it (Fantini 1985:170). Finally, he does not suggest that Mario's acquisition of /r/ and /ɾ/ shows any interference from English (Fantini 1985:131,189).

The common delay in acquiring the trill /r/ is evidenced in the existence of tongue-twister-like verses that are taught to young children to help them practice its pronunciation, such as the example in (2) recorded from firsthand observation in Colombia. All orthographic *r* below would be pronounced as the trill [r], according to the rules for distribution from Harris (1969), elaborated in (3) below.¹³

- (2) *R con R cigarro, R con R barril, rápido ruedan los carros cargados de azúcar del ferrocarril.*
 'R and R cigar, R and R barrel, the railroad freight cars filled with sugar roll along quickly.'

Some discussion of the phonemic status and allophonic alternations of /r/ and /ɾ/ is relevant to the assibilation and frication of syllable-final /ɾ/. The trill /r/ occurs as an underlying phoneme only intervocalically within a word, where it is contrastive with /ɾ/, as in *pero* [pero] 'but' / *perro* [pero] 'dog', one of many such minimal pairs in Spanish.¹⁴ In all other positions, the flap /ɾ/ is underlying, and in some phonological contexts undergoes a rule producing a surface trill /r/ (Harris 1969:46-52). Thus Mexican variation in syllable-final /ɾ/ applies to the underlying phoneme /ɾ/.¹⁵ However,

¹³ Note that for the *r* in *cargados* 'filled' and *azúcar* 'sugar', Harris predicts a surface trill in careful speech, but a flap in casual speech. I am presuming that the context of overt language teaching/correcting in which this rhyme would be used would constitute careful speech.

¹⁴ Intervocalically, orthographic *r* consistently corresponds to the flap while *rr* corresponds to the trill.

¹⁵ Intervocalic consonants in Spanish are necessarily syllable-initial.

Harris reports that underlying /ɾ/ surfaces categorically as [r] in some environments, listed in (3a), and as [ɾ] in others, listed in (3b). Importantly, he observed a different allophonic distribution depending on whether speech was casual or careful, relevant to this study in that syllable-final /ɾ/ may surface as both [ɾ] and [r].

- (3) a. Environments for /ɾ/ > [r]
 Word-initially (also maintained in the second member of a compound)
 Following /l/, /n/, and /s/ word-internally¹⁶
 In *careful* speech:
 Syllable-final, preceding consonants
- b. Environments for /ɾ/ > [ɾ]
 Following consonants other than /l/, /n/, and /s/ word-internally
 Word-finally preceding vowels
 In *casual* speech:
 Syllable-final, preceding consonants
- (Harris 1969:46-52)

Considering this, the delayed acquisition of the trill should not necessarily be a confounding factor for an analysis of variable /ɾ/ assibilation and frication. Also considering Harris' account, it appears that children show a delay in acquiring the phonetics, or correct articulation, of the trill, rather than the rule for its allophonic distribution. This is apparent because children are delayed in their production of [r] in all contexts, both intervocalically as a realization of /ɾ/, and in other positions as an allophonic realization of /ɾ/.

¹⁶ These first two environments are also cited in Stockwell and Bowen (1965).

3.3 Second person singular preterit alternation

3.3.1 Description of the variable

The preterit verbal paradigm of Central Mexican Spanish presents a variable morphological alternation in one form – 2nd person singular. The non-standard form consists in adding an -s to the end of the verb, producing two additional verbal inflections for the three Spanish verb conjugations, *-astes* (1st) and *-istes* (2nd and 3rd), that alternate with the standard *-aste* and *-iste*. It bears noting that both the standard and non-standard 2nd person singular preterit endings are distinct in the verbal paradigm; thus, when analyzing speech data, there is no ambiguity in identifying the person and number of the standard form, nor does the non-standard form eliminate or result in ambiguity. Table 3.4 shows the preterit verbal paradigm in Mexican Spanish for the three Spanish verb conjugations, with both 2nd person singular forms.¹⁷ Use of the non-standard preterit inflection is not restricted to Spanish spoken in Puebla or Mexico, and in fact has been observed to occur throughout the Spanish-speaking world.

¹⁷ As noted in Section 3.1.2, Central Mexican Spanish uses *tuteo* (Lipski 1994); dialects presenting *voseo* (use of the pronoun *vos*) may also use these 2nd person singular verb forms.

	1 st Conjugation <i>hablar</i> 'to speak'		2 nd conjugation <i>comer</i> 'to eat'		3 rd conjugation <i>dormir</i> 'to sleep'	
	Singular	Plural	Singular	Plural	Singular	Plural
1 st person	hablé	hablamos	comí	comimos	dormí	dormimos
2 nd person	hablaste ~ hablastes	hablaron	comiste ~ comistes	comieron	dormiste ~ dormistes	durmieron
3 rd person	habló	hablaron	comió	comieron	durmió	durmieron

Table 3.4: The preterit verbal paradigm, including 2nd person singular inflection alternation, for Mexican Spanish.¹⁸

It is worth making mention of the considerably more studied variable lenition of /s/ in Spanish, which, when resulting in deletion of word-final -s, is almost an opposite process to addition of -s to the preterit, though its distribution is not restricted to verb forms. Barnes (2012) points out that the occurrence of non-standard preterit -s in dialects that also present /s/ lenition could be due to hypercorrection, considering that all other indicative and subjunctive 2nd person singular verb forms end in -s, as shown in Table 3.5. While not ruling this out as a contributing causal factor in some dialects, at the least it cannot be said to contribute to the addition of preterit -s in dialects not characterized by -s lenition, including the Central Mexican dialect spoken by the participants in this study. However, there remains a related theory of causation that could apply to non-s-leniting dialects; this variation could have its roots in speakers motivated by an analogical extension of the 2nd person singular -s ending to the preterit

¹⁸ The general verbal paradigm shown here is not exclusive to the Spanish spoken in Puebla or Mexico; however, alternate forms of the 2nd person plural that may vary by dialect region outside of Mexico are not included.

form, producing a uniform 2nd person singular verbal ending throughout the verbal paradigm (Alcoba 1999 cited in Barnes 2012; Penny 2002:219).

		1 st Conjugation <i>hablar</i> ‘to speak’	2 nd conjugation <i>comer</i> ‘to eat’	3 rd conjugation <i>dormir</i> ‘to sleep’
Indicative	Present	hablas	comes	duermes
	Imperfect	hablabas	comías	dormías
	Preterit	hablaste	comiste	dormiste
	Future	hablarás	comerás	dormirás
	Conditional	hablarías	comerías	dormirías
Subjunctive	Present	hables	comas	duermas
	Imperfect	hablaras~hablases	comieras~comieses	durmieras~durmieses

Table 3.5: Indicative and subjunctive 2nd person singular verb forms (standard forms only) in Mexican Spanish.¹⁹

3.3.2 History and geographic distribution

The *-astes* and *-istes* preterit endings have been described qualitatively as occurring throughout Latin American and Peninsular Spanish (Barnes 2012; Escalante 2015). The standard preterit forms *-aste* and *-iste* developed from the Late Latin perfect inflections *-ASTI* and *-ISTI*; Lloyd (1987) reports only changes in the vowels of these forms in the evolution from Old Spanish to Modern Spanish (Lloyd 1987:300-1, 364). However, Penny (2002) cites the non-standard preterit *-s* as already occurring in Old Spanish, though infrequently. Penny also notes that the *-astes* and *-istes* variants have become “extremely common” in non-standard varieties of Modern Spanish (Penny 2002:161). Frago Gracia and Franco Figueroa (2003) state that variable non-standard preterit *-s*

¹⁹ Tenses employing analytic verb formation with auxiliary verbs are excluded; they use forms of *haber* ‘to have’ which are uniform across conjugations and likewise terminate in *-s*. The future subjunctive is also excluded from the table as it is uncommonly used if not absent from Central Mexican Spanish.

occurs throughout Latin America, as well as in rural Spain.²⁰ They similarly conclude that it is very likely a “continuation of classical Spanish usage,” citing Lapesa (1988). Escalante (2015) cites Menéndez Pidal (1962) who reports that the non-standard preterit occurred in early 18th century Spanish and likely earlier. Considering the distribution of the non-standard 2nd person singular preterit throughout the Spanish-speaking world today, it seems logical that it would have existed in the Old World prior to the dispersion of Spanish in the New World.

The only specific mention of the non-standard preterit -s in Mexican Spanish comes from Lipski (2008), who gives the examples of both *hablastes* and *hablates* ‘you spoke’ as forms occurring in Mexican Spanish, without reference to a particular geographical region within Mexico (Lipski 2008:95-96).²¹

Lipski calls the use of *hablastes* a general “urban” Spanish feature, which he defines as “corresponding to universal Spanish norms,” contrasting it with *hablates*, which he classifies as a general “rural/rustic” feature, i.e., “found in many rural Spanish

²⁰ Bybee and Brewer (1980) also report 2nd person singular preterit forms in dialects of Spain that terminate in -s invariably; below are the preterit verbal paradigms they give for 1st conjugation verbs in La Ribera and Valle de Aragón, in Western and Northeastern Spain respectively. The 2nd person singular preterit in Valle de Aragón is in fact identical to the non-standard form in Central Mexican Spanish.

1 st Conjugation <i>cantar</i> ‘to sing’	La Ribera		Valle de Aragón	
	Singular	Plural	Singular	Plural
1 st person	canté	cantémos	canté	cantémos
2 nd person	cantátes	cantátis	cantástes	cantéis
3 rd person	cantó	cantáron	cantó	cantóron

²¹ The latter form cited by Lipski, *-ates* (or *-ites*), shares the non-standard -s with the forms given in Table 3.4 for Mexican Spanish, but differs in that the internal -s- of the standard inflection is omitted. This form was not observed in the data for this study.

dialects throughout the world” (Lipski 2008:95-96). Penny says that the non-standard preterit -s has been “rejected by the standard” but continues to be used frequently in informal speech styles in many regions of the Spanish-speaking world (Penny 2002:219, also cited in Barnes 2012). Barnes (2012) reports that the non-standard preterit has been observed in lower and middle social classes, and more frequently in informal speech. Vaquero de Ramírez (1996) (also cited in Barnes 2012 and Escalante 2015) comments on the tendency to use the non-standard inflection generally in spoken language in Latin America, noting that it is “accepted” to different degrees depending on region (Vaquero de Ramírez 1996:29-30). Frago Gracia and Franco Figueroa (2003) suggest that it is the “least educated” speaker who will use the non-standard endings variably, noting that speakers also vary in frequency of use. Sánchez (1972) cites preterit forms with non-standard -s in Mexican-American Spanish in Texas, also mentioning that they occur in the “popular speech” of other Spanish-speaking countries. She gives as examples *fuites*, *fuistes* ‘you went/were’, *tomates*, *tomastes* ‘you took’, *vites*, *vistes* ‘you saw’, and *vinites*, *vinistes* ‘you came’; though she does not offer any quantitative data, Sánchez reports that the forms ending in -istes and -astes are less common than those ending in -ites and -ates.²² Frago Gracia and Franco Figueroa cite Caravedo’s (1992) observation that the lower classes of coastal Peru use non-standard -s with high frequency, giving as examples *cantastes* ‘you sang’, *fuistes* ‘you were/went’, and *dijistes* ‘you said’ (Frago Gracia and Franco Figueroa 2003:17,142). Similarly, Lipski (2014) cites Elizaincín and

²² The participants in Sánchez’s study were Mexican-Americans native to different areas of Texas, and thus cannot be said to be representative of a particular region in Mexico or the current state of any variety of Mexican Spanish in Mexico.. These speakers also differ from those of the Philadelphia Mexican community, of which the majority (of adults) are immigrants.

Díaz (1979) as reporting use of the non-standard preterit -s in Uruguay mainly among the lower social classes.

Frago Gracia and Franco Figueroa also cite non-standard variants terminating in -s but lacking the internal -s- of the standard inflection, like those cited by Sánchez (1972) in Texas and Lipski (2008) in Mexico. They are reported by Bentivoglio and Sedano (1992) as occurring with *voseo* in Colombia and Venezuela, as in *dijites* ‘you said’, *corrites* ‘you ran’, *fuites* ‘you were/went’, *tomates* ‘you took’, *comites* ‘you ate’, and *vivites* ‘you lived’ (Frago Gracia and Franco Figueroa 2003:17,142). In their discussion of the *voseo* verbal paradigm throughout Latin America, forms ending in -astes and -istes are also included, though they are not associated with specific regions or identified as either variable or invariant (Frago Gracia and Franco Figueroa 2003:137). Similarly noting a connection with *voseo* dialects, Lipski (2014) (also cited in Barnes 2012) observes that in areas where *voseo* predominates, the non-standard preterit -s is also more accepted. He suggests that it may reflect the origin of *voseo* in the second person plural form, whose pronoun was historically *vosotros*, and whose standard preterit verbal inflection terminated in -s. However, Lipski further notes that -istes and -astes occur in the “popular Spanish” of all Spanish-speaking countries, regardless of the presence of *voseo* (Lipski 2014:374).

While the ALM does chart some alternations in preterit forms, it does not document any 2nd person singular forms, standard or non-standard. Apart from Barnes’ (2012) confirmation that the non-standard preterit -s occurs in the *Habla Popular*

corpus of Mexico City Spanish used in her study, I have been unable to find any data regarding its geographic or quantitative linguistic distribution in Mexico.

3.3.3 Quantitative studies

Although this variation has been observed to be widespread and reported in several publications, it has been the subject of very little quantitative study as of yet. Barnes (2012) published the first empirical study of this variable to my knowledge (and according to Escalante 2015), using spoken language corpus data from Spain, Venezuela, Mexico, Puerto Rico, Argentina, Colombia, Cuba and Peru.²³ Data from all countries other than Spain and Venezuela were combined into one category due to low token counts, so it will not be possible to directly compare the results of this study with Barnes' results for Mexican Spanish. The corpus data in Barnes' study included radio and television programs, telephone conversations, and in-person conversations and sociolinguistic interviews, thus comprising a variety of speech styles and levels of formality. Barnes did not examine geographical region, level of formality, or speech style as factors, but conducted analysis of only internal linguistic factors. Table 3.6 shows the frequency of the non-standard preterit –s in Barnes' corpus data by geographical region.

²³ Barnes notes that some of the regional varieties represented in the corpora used in her study are characterized by frequent aspiration and deletion of –s (Barnes 2012:42).

	-s marked	N
Spain	13%	253
Venezuela	13.9%	483
Other (including Mexico)	16.1%	118
Total	13.9%	854

Table 3.6: Overall distribution of –s marking on preterit verb forms that show variation (data from Barnes 2012:40).

Barnes found that lower-frequency preterit forms favored the non-standard preterit –s more than higher-frequency forms, and that the addition of –s was favored by a following vowel, and disfavored by a following consonant or pause. Table 3.7 shows the frequency of the non-standard preterit –s in Barnes’ corpus data by following segment.

Following Segment	% -s marked	N
Vowel	19.7%	295
Consonant	12%	350
Pause	9.1%	209
Total	13.9%	854

Table 3.7: Frequency of –s marking on preterit verb by following segment (data from Barnes 2012:43).

Barnes attributes the direction of effect of following segment to a preference for CV syllables in Spanish; when non-standard –s is followed by a vowel, the –s can resyllabify across the word boundary to become the onset of a CV syllable with the following vowel, while –s preceding a consonant or pause can only be produced as a syllable coda (Barnes 2012:45-6).

Finally, Barnes remarks that she found no evidence to indicate whether use of the non-standard preterit –s is a change in progress in Spanish, or in what direction it could be progressing (Barnes 2012).

A study by Escalante (2015) followed the methodology of Barnes (2012), applying it to written data from Spanish-language tweets on Twitter. Escalante's data consisted of tweets randomly sampled from Twitter over a 24-hour period. Of those tweets, Escalante collected tokens exclusively of the 37 verbs in Barnes' (2012) data set. As in Barnes' study, only internal linguistic factors were considered. Escalante's study replicated Barnes' (2012) finding that lower-frequency preterit forms favored the non-standard preterit *-s*. Table 3.8 gives the overall rate of non-standard preterit *-s* in Escalante's Twitter data, which is almost 10% higher than that found by Barnes (2012).

<i>-s</i> marked	N
23.3%	404

Table 3.8: Overall distribution of *-s* marking on preterit verb forms selected from tweets (data from Escalante 2015:1).

3.3.4 Issues for L1 and bilingual acquisition

In Fantini's study of Mario discussed above, he cites production of at least one 2nd person singular preterit by Mario at age 3;0 (Fantini 1985:166). Fantini does not discuss any use of the non-standard preterit *-s*.

López Ornat et al. (1994) conducted a study of the L1 acquisition of Spanish of a child named María growing up in Madrid, from age 1;7 to 4;0.²⁴ In their discussion of her development of verb forms, they report that the preterit is one of the first three verb tenses acquired, following the present and the periphrastic future. María first began

²⁴ María's data is now part of the CHILDES corpus.

producing 2nd person singular forms in the present tense; at 21-22 months she produced 2nd person singular with two verbs, using the 3rd person singular for all of her other present tense verbs. At 23-24 months she began to produce the preterit tense, beginning by only using the 3rd person singular form and for only one verb. From age 2;1 to 2;2 she began to produce the 1st and 2nd person singular forms of the preterit as well, for eight verbs and two verbs respectively. María then began to show productive use of the preterit (as well as other tenses) at age 2;10 (López Ornat et al. 1994:38-44). López Ornat et al. do not report on any use of the non-standard preterit -s.

Various studies have shown children to produce preterit verb forms at age 3 in both monolingual and bilingual contexts (González 1978; Hernández Pina 1984; Pérez-Pereira 1989; Radford and Ploennig-Pacheco 1995; cited in Bedore et al. 2004).

4 STUDY PARTICIPANTS AND FIELDWORK

METHODOLOGY

4.1 The Philadelphia Mexican community

4.1.1 Origins and the community today

Mexicans represent a large proportion of the Hispanic population of the United States: according to the U.S. Census, 59% of Hispanics were Mexican in 2000, with the most recent estimate up to 64% for 2014. The largest and longest-standing populations of Mexican origin are in Texas and California (Lipski 2008:75-7). However, the Mexican community in Philadelphia is relatively new.

According to the U.S. Census Bureau, there were 15,531 people of Mexican origin living in Philadelphia in 2010. This represented 8.3% of the total Philadelphia Hispanic population, and around 1% of the overall population of the city of 1,526,006 at the time. The Mexican population of Philadelphia has increased quite rapidly in recent years, more than doubling from 6,220 inhabitants in the year 2000, which was 4.8% of the Hispanic population at the time, and about 0.04% of the city's total population of 1,517,550 (U.S. Census Bureau 2000, 2010). According to personal conversation with a local non-profit coordinator and two recent documentary films, Mexican immigration to Philadelphia began in the 1990s (D. Owen, p.c.; *Échele Ganas*; *El Sol Sale Para Todos*). Since 1998, the greatest concentration of Mexican immigrants in Philadelphia has been found

around the Italian Market in South Philadelphia, with residents concentrated in the area bordered by Washington and Oregon Avenues, and Front and 8th Streets (*El Sol Sale Para Todos*, Shaw 2011b). As of 2010, there were 83 Mexican-owned businesses in South Philadelphia, 39 of these located in the Italian Market area (*El Sol Sale Para Todos*).

During the first wave of Mexican immigration to Philadelphia in the 1990s, immigrants were likely to plan a temporary stay, working for a short time up to a few years to save money and return home to Mexico. After 2001, they began to stay and establish their families here (D. Owen, p.c.; *Échele Ganas*; *El Sol Sale Para Todos*). One early immigrant reports that as recently as 1998 it was still rare to meet other Mexicans in Philadelphia (*El Sol Sale Para Todos*). Otheguy and Zentella also observe that the Mexican population of New York City began to grow in the 1990s, and had more than doubled from the year 2000 to the time of publication of their book in 2012 (Otheguy and Zentella 2012:6).

The population of Mexicans in Philadelphia for the most part falls into roughly two generations: young parents in their 20s and 30s who grew up in Mexico and immigrated recently, and their children, usually no older than elementary school age, many of whom were born in Philadelphia and some of whom arrived with their parents at a young age. The majority of South Philadelphia's Mexican community has its origin in the state of Puebla, although there is no exact statistic for this (Shaw 2011a, 2011b, 2012; D. Owen, p.c.; *Échele Ganas*; *El Sol Sale Para Todos*). The presence of Puebla is evident in the names of restaurants and other Mexican businesses in South Philadelphia,

as well as the now yearly tradition of the *Cinco de Mayo* parade that takes place along Washington Avenue. Also known as *El Día de la Batalla de Puebla* ‘The Day of the Battle of Puebla’, the holiday is specifically significant to those from the state of Puebla, as the date commemorates a victorious battle there against French forces on May 5, 1862. The state of Puebla is highlighted in pink on the map in Figure 4.1.



Figure 4.1: Map showing the state of Puebla (*Maps of Mexico* 2012). ‘PUEBLA’ indicates the state while ‘Puebla’ indicates the capital city of the same name.

According to Shaw (2011) a large number of the Mexicans in South Philadelphia are from a volcanic mountainous region of Puebla, which lies to the east of Mexico City. From within this region, the towns of San Mateo de Ozolco and San Lucas Atzala are

represented by a notable number of immigrants living in Philadelphia (D. Owen, p.c.; Shaw 2011, 2012). It is common to hear from those familiar with the Mexican community that around half of the residents of San Mateo de Ozolco, with an original population of approximately 4,000 people, now live in Philadelphia (D. Owen, p.c.; Shaw 2011). The aforementioned *Cinco de Mayo* celebration in Philadelphia is also referred to as the *Carnaval de San Mateo* or *San Mateo Carnavaleiro* ‘the Carnival of San Mateo’, because it in fact replicates the carnival celebration of San Mateo de Ozolco, Puebla (Shaw 2012).

Different (and not incompatible) explanations exist for the cause of recent Mexican immigration from Puebla, and for the notable number of immigrants from San Mateo de Ozolco and neighboring towns. One push for immigration was the suffering economy in the state of Puebla in the 1980s (Shaw 2011). San Mateo de Ozolco and other towns in its region are poor, rural communities that rely mainly on subsistence farming (D. Owen, p.c.).²⁵ In addition to a lack of economic opportunities, immigrants from Puebla also cite discrimination because of their status as an indigenous people as motivation for choosing the United States over large cities in Mexico, such as the nearby cities of Puebla and Cholula, or Mexico City. Puebla is within a region inhabited by the Nahuatl people, an indigenous group preceding the Spanish colonization of Mexico; in towns like San Mateo de Ozolco, Spanish is a second language for native Nahuatl speakers just two generations back, although for its younger residents Nahuatl may no

²⁵ However, a growing construction industry has apparently sprung up entirely due to immigrants to the US who send money to build houses for themselves and their families in Puebla.

longer be learned as a first language. While the experiences of most Mexican immigrants in the United States are likely not free of discrimination, at least some immigrants consider their status as “just Mexican” in the U.S. preferable to their status as *Indios* ‘Indians’ in Mexico (D. Owen, p.c.).

Another possible influence on continued immigration could have been several eruptions of the volcano Popocatepetl and related earthquakes in 1997 and 1998, which destroyed homes and farmland, followed by a larger eruption in 2000 which precipitated the evacuation of 50,000 residents of the area (San Mateo de Ozolco is the highest village on the slope of the volcano) (D. Owen, p.c.; Volcano World). Other sources say that Poblanos initially immigrated to New York City, but left for Philadelphia and other cities with lower costs of living when housing prices rose in the 1990s. There are even accounts of the first immigrant to Philadelphia from San Mateo de Ozolco who is credited with sparking the wave of immigration. One story that almost borders on legend has it that a man from San Mateo de Ozolco, whose name is unknown, found himself in Philadelphia having lost his way to New York City. On seeing a Mexican flag hanging outside of Tequila’s restaurant in Center City, he went inside to ask for directions. Instead, the restaurant employees convinced him that Philadelphia was a better city to live in than New York, and he decided to stay (D. Owen, p.c.). A somewhat similar story reported in local news features a resident of San Mateo de Ozolco named Efren Tellez. A Philadelphia Mexican restaurant owner who remains anonymous tells his version of the story: Tellez was bound for New York but was left in Philadelphia by a smuggler around 1995. He arrived at the restaurant looking for help, and was hired by the owner. A cousin of Tellez, Mario Perez, tells a third version: Tellez originally

immigrated to New York City, but didn't like living there and so came to Philadelphia on the recommendation of a friend. In this account Tellez invited his cousin, Perez, and other family members from San Mateo de Ozolco (Shaw 2011).

4.1.2 Schools in the community

At Kingston Elementary School, 39% of students were English Language Learners (ELLs) at the time of this study in 2012-14. ELLs spend two hours of every school day in an ESOL (English for Speakers of Other Languages) classroom, and also receive assistance from an ESOL teacher in their main classroom one or two days per week. Some, but not all, of the Mexican children at Kingston School were required to participate in the ESOL program. While the School District of Philadelphia does not provide statistics for how many students of each ethnicity are ELLs, I can report on a representative subsample based on observation of two classrooms. In a 1st grade classroom with 24 students, 9 out of 24 (37.5%) participated in the ESOL program, while 1 of the 5 children of Mexican descent (20%) was an ESOL student. In a 2nd grade classroom with 22 students, 6 out of 22 (27.3%) participated in the ESOL program, while 2 of 8 Mexican children (25%) were ESOL students. Thus 80% of the Mexican students in the 1st grade classroom and 75% of those in the 2nd grade classroom had obtained a level of English fluency such that they were not judged to need the ESOL program.

While most of the children in the *Puentes de Salud* tutoring program attend Kingston, some are also students at Carlisle Elementary School and Ralph Waldo

Emerson Elementary School, both located nearby.²⁶ The locations of the school catchment areas of these three schools are indicated in Figure 4.2.

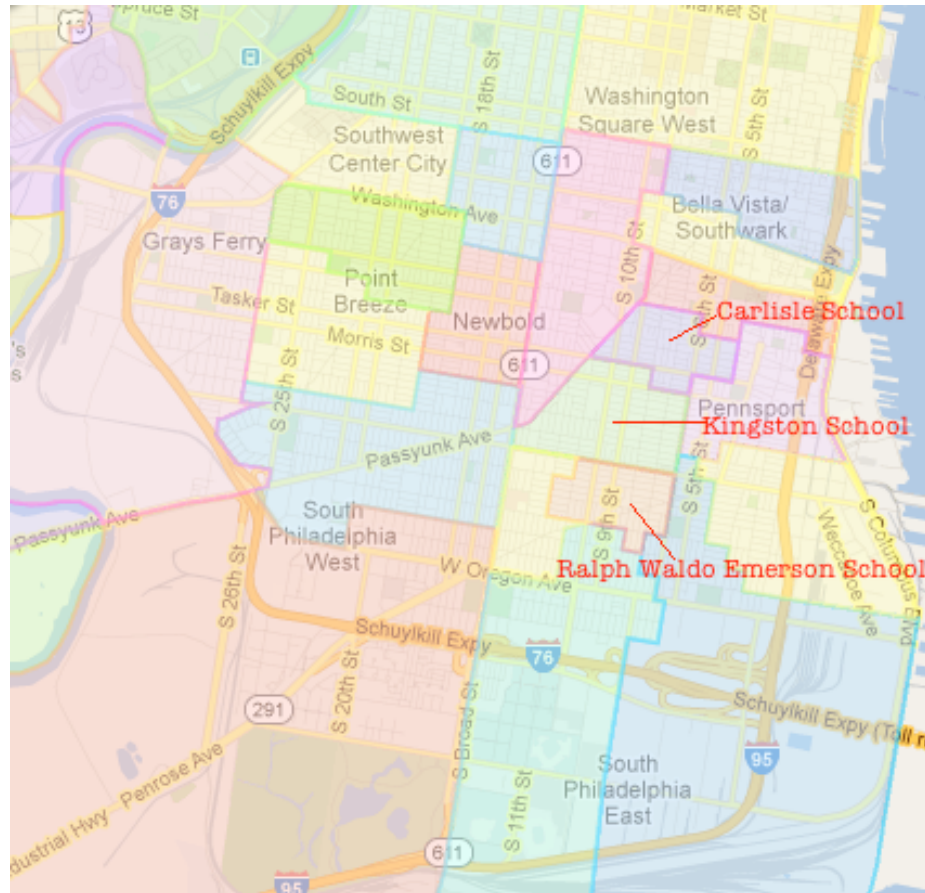


Figure 4.2: Location of three South Philadelphia school catchment areas serving the Mexican community (school district map from The School District of Philadelphia 2012, school names added (pseudonyms)).

Figure 4.3 shows statistical data from the School District of Philadelphia on the ethnic makeup of the student bodies at these three schools, which are quite similar to one another. Data on the country of origin of students is not available, but the

²⁶ All school names are pseudonyms.

percentage of Latino students may be taken as an approximation of the percentage of Mexican students, considering that this is the dominant origin of the South Philadelphia Latino community (The School District of Philadelphia 2012).

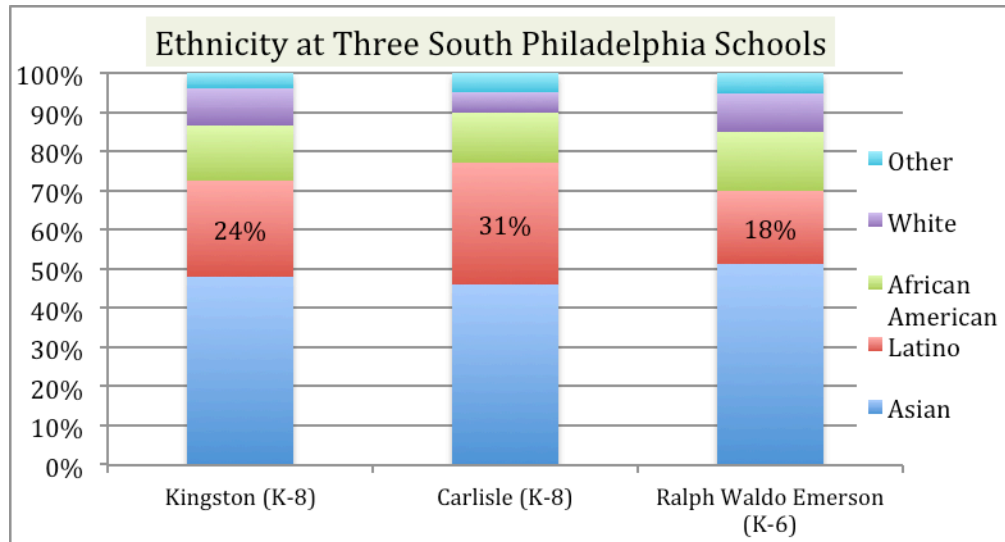


Figure 4.3: Distribution of ethnicities among the student bodies of Kingston, Carlisle, and Ralph Waldo Emerson Schools in South Philadelphia (Data from The School District of Philadelphia 2012).

Schools in this neighborhood of South Philadelphia serve many English Language Learners, nearly 40% of the student body for all three schools discussed here, as shown in Figure 4.4. This is in comparison with a much lower overall rate of 8.1% of all students in the Philadelphia School District, calculated for grades K-12 (The School District of Philadelphia 2012).

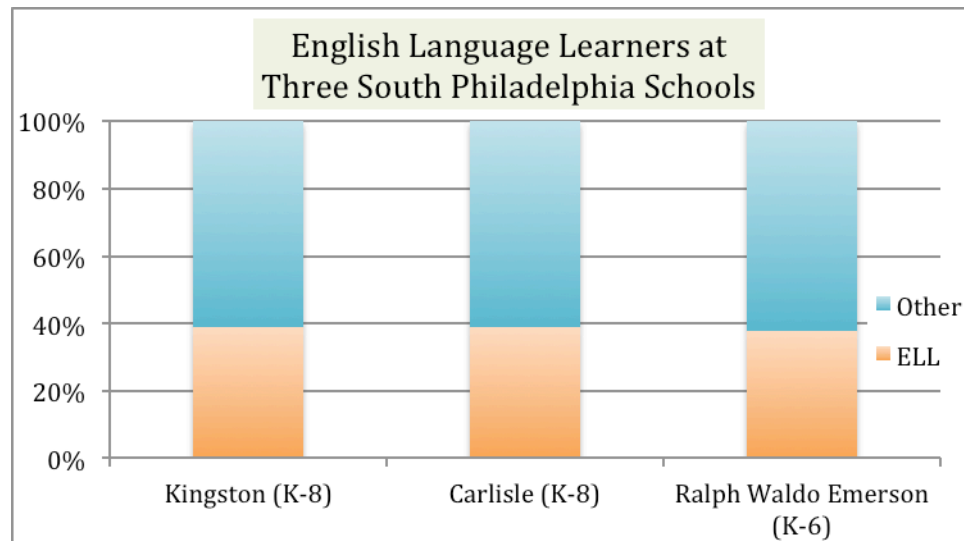


Figure 4.4: Percentage of English Language Learners at Kingston, Carlisle, and Ralph Waldo Emerson Schools in South Philadelphia (Data from The School District of Philadelphia 2012).

During classroom observation, I observed the Mexican children interacting with their peers in class, at lunch, and during recess. Overall I did not find that they only interacted with other Mexican students, as might be expected. Their social interactions did not seem to be delineated by country of origin or native language. 1st and 2nd graders of Mexican descent chose to communicate, and seemed to do so comfortably, with their Asian, white, and African American, as well as Mexican, classmates in the classroom. In the lunchroom, the mix of ethnicities was maintained at all lunch tables. The only notable difference was that at lunch, where the assigned seating of the classroom did not apply, kids divided themselves by gender. At lunch I also discovered that many non-Mexican students were familiar with certain Mexican snacks that the Mexican kids brought to lunch to share (spicy chips called *Takis* are especially popular). When I observed Mexican children talking amongst themselves in the classroom and at lunch, I found that they spoke English rather than Spanish. I saw an exception to this behavior

only in the case of two boys who were ESOL students, one in 1st grade and one in 2nd grade. On a few occasions during class, a Mexican classmate at their respective tables who was more fluent in English would help them out by translating the teacher's directions into Spanish.

4.2 Study participants

Through my involvement as a volunteer teacher of English as a Second Language (ESL) with *Puentes de Salud*, an NGO that focuses on the needs of the South Philadelphia Latino community, I became acquainted with several Mexican immigrant families. I first became involved with *Puentes de Salud* as a tutor for elementary school children, and then transitioned to teaching English to adults. The students of my ESL class were mostly mothers of children in the *Puentes de Salud* tutoring program. Some of these students also invited friends and family to join the class. As is characteristic of the Mexican community in Philadelphia in general, the majority of the students were from the state of Puebla. They were all young women, and with the exception of one, all had at least one young child. During the school year, the class was held at Kingston Elementary School after school hours.²⁷ The ESL students' school age children participated in the tutoring program next door during our class. In order for the need for childcare to not be an obstacle to attending class, the younger children were welcomed to join us in the classroom and play together, or sometimes hang onto their mothers,

²⁷ The name given for the elementary school is a pseudonym.

during class. In this way I became acquainted with the children, and developed friendly, trusting relationships with the women.

Three of the ESL students agreed to participate in this study: Andrea R., Carolina A., and Patricia J. The remaining three adult participants were recruited through personal connections with the ESL students and their involvement in other *Puentes de Salud* programs: María C., Diana F., and Gloria E.

Family	Name	Age	Sex
R	Andrea R.	28	F
R	Ilsa R.	6;3	F
R	Felipe R.	2;10	M
J	Patricia J.	27	F
J	Jorge J.	11;1	M
J	Margarita J.	5;2	F
A	Carolina A.	25	F
A	Moises A.	7;5	M
A	Cristina A.	6;4	F
A	Carmenza A.	2;8	F
C	María C.	28	F
C	Claudia C.	8;8	F
C	Linda C.	7;5	F
C	German C.	3;2	M
F	Diana F.	29	F
F	Laura F.	8;8	F
F	Luis F.	4;8	M
E	Gloria E.	27	F
E	Ruby E.	6;10	F
E	Fabricio E.	4;5	M

Table 4.1: Participant family members.

All six adult participants were in their mid- to late-20s at the time of the study and were the primary caregivers for their children. Table 4.1 gives each participant's pseudonym,

age and sex. Each family was given a (pseudonymous) last name initial, and is also indicated with a block of color in the table.

At the time of the study, the mothers of the participant families had been living in the United States for time periods ranging from 2 to 11 years. Some were stay-at-home mothers and some were employed outside of the home. Some of their children were born in the US and some in Mexico. All of the mothers grew up in the state of Puebla in Mexico, with the exception of Andrea R. who spent a portion of her childhood in Mexico City as well. They represent a range of educational levels from no formal education, to primary education, to post-secondary education. They also differ in their levels of fluency in English. The following sections provide some background on each participant family.

4.2.1 The J. Family

Patricia J., age 25, had arrived most recently of the mothers. At the time of the study, Patricia had been in the US for a little over two years having immigrated at age 23. Patricia had studied in school through 6th grade in Mexico. While studying she worked in a store making tortillas on the weekends. After she left school, she worked in a clothing factory in another town at age 16 or 17, and then preparing meals at the school in her town. At the time of the study, she was a stay-at-home mother. She is from the small mountainside town of San Mateo Ozolco, Puebla (discussed in Section 4.1), located high up the slope of the Popocatepetl volcano, which lies between Mexico City and the city of

Puebla. San Mateo Ozolco is about 25 miles from the city of Puebla to the east, and 86 miles from Mexico City to the west.²⁸

Patricia married her husband Cyrano J. in Mexico, and their two children, Jorge, age 11, and Margarita, age 5;2, were born in Patricia's hometown. Margarita came to Philadelphia with her mother and father when she was 2 years old, having had no formal schooling in Mexico. Jorge stayed with his grandparents in Mexico for another two years while his parents arranged for his move, arriving in the US for the first time just a few months prior to the study, at age 10. Due to his age and having begun his education in Mexico, he was not included for linguistic analysis, though he participated in several of the recorded family interactions. Patricia, Cyrano, Jorge, and Margarita now live together in an apartment in South Philadelphia.

Patricia had not studied English before starting ESL classes with me a few months prior to the time of the study. At the time, she told me that she had just begun to venture out into the city after two years in Philadelphia, and thus had had little opportunity to gain experience with English.²⁹ When I met Patricia, her children were just beginning their first year of school in the US; for Margarita, it was her first year of preschool. At the time of the study, Margarita had then been in preschool for a few months.

²⁸ The trip from San Mateo Ozolco to Mexico City takes 3-4 hours by bus with one layover.

²⁹ In general there was enough of a Mexican presence in South Philadelphia, including restaurants, stores, and services, that one could manage many life necessities speaking only Spanish.

4.2.2 The R. Family

Andrea R., age 28, arrived in Philadelphia 6 years prior to the time of the study when she was 22 years old. She had attended school through 10th grade in Mexico before beginning to work, and like Patricia, was a stay-at-home mother in Philadelphia. Andrea is from San Andrés Calpan, Puebla, another small town on the slope of Popocatepetl, just about 6 miles east down the mountain from San Mateo Ozolco, Patricia J.'s hometown. Andrea was born in San Andrés Calpan, but moved to Mexico City shortly after her birth. At age 15, she returned to her birthplace with her mother and siblings to live with her extended family. Although she spent most of her childhood in Mexico City, Andrea says that she feels her home is in Puebla. While living in San Andrés Calpan from age 15 to 22, she worked in the city of Puebla in a grocery store, and sometimes took care of her younger brother who was a toddler.

Andrea married her husband Camilo R. in Mexico, and was eight months pregnant with her first child, Ilsa, when they immigrated to the US. Her two children, Ilsa, age 6;3, and Felipe, age 2;10, were both born in Philadelphia. Andrea, Camilo, Ilsa, and Felipe lived in an apartment in South Philadelphia, where Camilo's brother was also living at the time of the study. Camilo was working in a bakery in the Italian Market area at the time of the study. Ilsa began school for the first time at age 4;8 in a Head Start preschool in South Philadelphia, and completed half a year there before entering kindergarten. At the time of the study Felipe had not yet begun preschool.

Andrea R.'s knowledge of English was quite limited, as her experience with the language came primarily from the few years her 6-year-old daughter had been in school.

Ilsa is a quiet child, friendly and cooperative. Andrea R. told me that Ilsa liked to teach Felipe English words. He would repeat words that his sister had taught him, such as some numbers and letters of the alphabet. Andrea recounted that Ilsa showed her preference for English by giving her brother instructions such as “not *uno*, one!” in response to his using *uno* ‘one’ in Spanish. This seems to be a common attitude among children of Ilsa’s age. Many of my ESL student mothers, who were not yet able to converse comfortably in English, told me that their children wanted to speak English with them at home.³⁰

4.2.3 The A. Family

Carolina A. arrived in Philadelphia at age 25 and had been living in Philadelphia for 8 years prior to the time of the study. Carolina is from San Andrés Calpan, Puebla, also Andrea R’s hometown, where she was raised by her grandparents. Carolina went to school in San Andrés Calpan through the first half of 8th grade. She began helping her grandparents on their farm, where they raised pigs and cultivated fruits and vegetables, at age 10 while still in school. Carolina had to leave school to work at age 15, first working as a waitress in the city of Puebla. At age 16, she worked as a live-in housekeeper with a family in Mexico City for a few months, and then with another family in Oaxaca for a few

³⁰ In a Linguistics 560 report of elementary school children in a central North Philadelphia Puerto Rican neighborhood, Freed et al. (1976) found mixed usage of Spanish and English in different contexts. While a few children in the study spoke only Spanish at home, the majority used Spanish and English. In addition, while a few used only English with siblings, friends, or teachers, the majority used both Spanish and English in these contexts. This shows a similar desire of children to use English in different contexts, including at home. However, it appears that as of yet the South Philadelphia Mexican community differs from the Puerto Rican community in that there is less mixing of languages within each context: Spanish dominates at home for most, while English dominates in other contexts.

weeks. She then returned to San Andrés Calpan to live with her grandparents, where she had her first child and worked doing laundry and harvesting fruit.

At age 17, Carolina separated from the father of her child and joined her mother in Philadelphia, who had immigrated one year earlier, though they did not have a close relationship and did not continue to live together here. She began working and sent money back to Mexico for her daughter, who continues to live in San Andrés Calpan with her grandparents. At the time of the study, she was working cleaning restaurants and other businesses after hours or early in the morning. Her children Moises, age 7;5, Cristina, age 6;4, and Carmenza, age 2;8, were all born in Philadelphia; Carolina is now separated from their father, who she met in Philadelphia and who is also from Puebla. Carolina, Moises, Cristina, and Carmenza now live together in a row home in South Philadelphia.

Carolina had a basic functional level of English fluency; she managed some vocabulary and short phrases in English, mostly related to her work and her children's schoolwork. Like many mothers in the community, she tried to learn along with her children so that she could help them with their schoolwork. Her children used English at home more than the other participants in the study, and were more likely to identify lexical items that they knew in English but not in Spanish.

4.2.4 The E. Family

Like Carolina A., Gloria E. arrived in the US at age 17. Aged 27 at the time of the study, she had been in the US for 10 years. She is from San Martín Zoquiapan, in the

municipality of Santa María Coronango, Puebla, near the base of Popocatepetl. Like the hometowns of Patricia, Andrea, and Carolina, San Martín Zoquiapan is northwest of the city of Puebla (about 14 miles away), but closer to the highway connecting Puebla and Mexico City. Gloria attended school through 9th grade in Mexico. She then worked with her family in a clothing store in the city of Puebla, both making and selling clothing. She worked there for about two years until she left Mexico to come to the US at age 17.

When I met Gloria, she had been living in Philadelphia for 5 years, having previously lived in Dover, Delaware. After moving to Philadelphia, she met her husband Miguel E., also from Puebla, at a popular restaurant chain in Center City where they both worked. At the time of the study she continued to work at the same restaurant as a busboy. Gloria and Miguel's children Ruby, age 6 ;10, and Fabricio, age 4 ;5, were both born in the US. Ruby spent one year in head start preschool before starting kindergarten in South Philadelphia, and Fabricio was eight months into his first year of head start preschool at the time of the study. The E. family lived in a row home with Miguel's adult cousin and two married brothers and their families. The brothers have five children between them, who are Ruby and Fabricio's cousins, ages 2, 3, 4, 8 and 9.

Gloria said that Ruby started to learn English from her older cousins before starting preschool, and that Fabricio had also been learning English from his sister and cousins. According to Gloria, Fabricio was using more English than Ruby at home at the time of the study. Although both Ruby and Fabricio spoke some English at home with each other and their cousins, Ruby would sometimes tell Fabricio that he should speak

Spanish instead of English. Gloria had become familiar with some English vocabulary, but continued to speak exclusively Spanish to her children.

4.2.5 The C. Family

Like Carolina A. and Gloria E., María C. arrived in Philadelphia at age 17. At age 28 at the time of the study, she had been in the US for 11 years. She is from San Mateo Ozolco, Puebla, like Patricia J. María never received formal education in Mexico, due to her father's belief that girls should not be educated. As a child she helped on her grandparents' farm, and left home at age 11 to work as a live-in nanny and housekeeper.

When María immigrated to the US at 17, she could not read or write in Spanish or English. She told me that she has learned alongside her children since they started elementary school, and that she can now read well but is less confident in her writing. She previously worked in agriculture and a flower factory outside of Philadelphia, then as a dishwasher and prep chef in a Center City Italian restaurant, and briefly cleaning for an art school. She currently works in an Italian specialty foods store in the Italian Market in South Philadelphia. Maria met her husband Antonio, also from Puebla, working at a vegetable-packaging factory in New Jersey, her first job living in Philadelphia. He was living in Bristol, PA at the time but moved to South Philadelphia to live with her. Their children Claudia, age 8;8, Linda, age 7;5, and German, age 3;2 were all born in the US. At the time of the study, Linda was in 1st grade and Claudia was in 3rd grade, while German had not yet begun formal schooling. María, Antonio, and their children shared their row home with housemates, a boy called Renaldo X. around Linda's age, and his father, who were not related to the C. family.

María had not studied English in a formal setting, but had a basic level from her work experience and her efforts to help Claudia and Linda with their schoolwork.

Claudia and Linda sometimes spoke English when playing together, but primarily spoke Spanish with their mother. German had picked up a few lexical items in English from his older sisters, though he had not yet begun school.

4.2.6 The F. Family

Diana F. had been in the US since age 18, for 11 years. She grew up in Atlixco, Puebla, a town about 21 miles southwest of the city of Puebla, and near the base of Popocatepetl. Diana completed high school and also studied for a nursing degree in Mexico, consisting in three years of coursework and one year of service. Short of completing her thesis, Diana decided to come to the US for a short time to save up money, and then return to México to complete her degree and begin her career as a nurse.

While working at a restaurant in Philadelphia, she met her husband Ramón and began a family. She decided to stay in Philadelphia to raise their children, putting her career in nursing on hold. Diana's children Laura, age 8;8, and Luis, 4;8, both born in Philadelphia, were at the end of 3rd grade and the first year of preschool, respectively, at the time of the study. Laura was studying at Kingston Elementary School, the local public school, like most of the children in this study; however, she would be the first child from the group of participants to study at a charter school outside of the neighborhood, having been accepted to a bilingual charter school for 4th grade in Center City. At the time of the study Diana had been working at a Center City restaurant for several years as a chef. She

told me that she had been successful as a chef and felt she had found a new career that suited her well, though she had not expected it to. Diana, Ramón, Laura, and Luis lived together in a row home in South Philadelphia, with their rabbit Blanca Nieves ('Snow White'), a new addition to the family during their participation in this study.

Diana had taken some English classes in Philadelphia, and her level was somewhat more advanced than the other women in the study. The F. family did not use much English at home, except in teaching contexts, and when Laura F. occasionally sang a song or read a story in English.

4.3 Fieldwork

This study was conducted between 2012 and 2014, with 17 participants in 6 families; the parents in all of the families had immigrated to Philadelphia from Puebla, Mexico.³¹ Recordings were made of the speech of all children in each family between ages 3 and 8 when possible, as well as the primary caregiver, who was the mother in all cases. Following Foulkes et al. (2005) and Smith et al. (2007), data collection for parents was limited to the primary caregiver. All child participants had entered the Philadelphia school system by age 5, or had not yet begun formal schooling. Families were selected for a sample of children balanced for sex, and distributed evenly by age, as closely as possible. The speech of all children in Table 4.1 (above) was recorded, though Carmenza

³¹ Research was conducted following Institutional Review Board research protocol #815843, submitted by the author with Dr. William Labov as principal investigator.

A. and Jorge J. did not meet requirements for the study, and Felipe R. was not able to wear a microphone.³²

Table 4.2 shows the age and gender distribution of the participant children who were recorded and included for analysis.

Age	3	4	5	6	7	8	Total
Male	1	2			1		4
Female			1	3	1	2	7
Total	1	2	1	3	2	2	11

Table 4.2: Age and gender distribution of participant children.

Each family was asked to conduct at-home self-recordings while the researcher was not present, following the methodology of Smith et al. (2007). Digital recorders were provided for each eligible child between age 3 and 8 and one primary caregiver, to carry in small backpacks that they wore during recording sessions. I visited each family in their home to train caregivers in the operation of the digital recorders, and provided them with written instructions and spare batteries. They were asked to turn on the tape recorders for a total of 10 hours of interaction, with a minimum of 5 recording sessions, over a period of 2 weeks. They were encouraged to record a range of family activities, with attention to minimizing background noise such as television. All communication involved in training, interviews, and follow-up visits was conducted in Spanish. All study materials, including recruitment fliers, recording instructions, and IRB consent forms

³² Recording was attempted with Felipe R. as he turned 3 during the study; though he enjoyed wearing the small backpack used to carry the digital recorder, he could not be convinced to stop playing with the microphone.

were prepared in Spanish as well. I should note here that I speak Spanish at a near-native level, and that prior to the study, I spoke Spanish regularly with those study participants who were students in my ESL class.

In addition to the value of obtaining child-directed speech from the primary caregiver, recording in the absence of a researcher has the intention of reducing the effect of the observer's paradox, which as noted by Smith et al. (2007) "...is exacerbated in the case of young children, where the presence of an outsider in the home can render the child literally 'speechless'" (Smith et al. 2007:68). For this study, recording children in the absence of the researcher was essential not only to obtain a (more) natural, conversational level of speech, but also to avoid influencing language choice. When visiting families in their homes, I observed that some children preferred to speak English in my presence, knowing that I spoke English, where they might otherwise have chosen to speak Spanish. On the first visit to Andrea R.'s home, her daughter Ilsa R. chose to switch to English after speaking with me in Spanish for a few minutes, though I began the conversation in Spanish. In order to obtain speech in Spanish from children like her, it would have been necessary to make an overt request for them to speak in Spanish, which could result in less-than-natural conversation, an uncooperative or unhappy child, or might simply be unsuccessful.

During the period that each family conducted their self-recordings, I also visited each primary caregiver in her home to record a sociolinguistic interview of approximately 1 hour. Although this study aims to draw conclusions about child acquisition, it is important to have a sample of adult-directed speech from caregivers in

addition to child-directed speech. Studies discussed in Chapter 2 have shown child-directed speech to differ from adult-directed speech, especially in the case of sociolinguistic variables that may have a negative social evaluation (Roberts 2002, Smith et al. 2007). Thus child-directed speech alone may not fully reflect the state of a variable in the parent generation of the speech communities to be studied. Smith et al. (2007) collected speech between adults in addition to caregiver child-directed speech, and Roberts (1997a) collected adult speech in individual sociolinguistic interviews in addition to child speech.

As can be seen in Table 4.1 above (in Section 4.2), each participant family has at least two children, and of these children at least one is a girl and at least one is a boy. Consequently, the child-directed speech recorded from all caregivers includes speech to both boys and girls, as well as to children of multiple ages. With the amount of data collected for this study, and due to its conversational nature, it was not possible to compare child-directed speech to boys versus girls, or to younger versus older children, as was done in Foulkes et al. (2005) and Smith et al. (2007). A greater amount of recorded data would be necessary to collect sufficient portions of speech from caregivers that could be clearly identified as directed to one child or another within each family.

The number of participants and amount of speech to be collected was determined according to previous studies that conducted statistical analysis of the speech of young children. For her 1997 studies of (-t,d) deletion with 3- and 4-year old children, Roberts used 16 children and 8 parents, and collected a total of 146 hours of recording. The parents were interviewed for comparison; assuming each parent was recorded for about

an hour, each child must have been recorded for around 8.5 hours. Roberts was able to collect between 44 and 250 tokens per child, conducting 6-13 sessions per child (44 tokens having been obtained from a particularly quiet child) (Roberts 1997a, 2002, Roberts and Labov 1995). Guy (1980) suggests a minimum of 10, but more advisably 35, tokens per factor for (-t,d) deletion to obtain significant results for individual speakers. To obtain this many tokens from adult speakers, Guy proposes a sociolinguistic interview of 2 hours in length (he does not discuss obtaining tokens from children).³³ Roberts reports that the data for (-t,d) deletion obtained in an adult interview of 1 to 2 hours is obtained in anywhere from 8 to 14 hours of speech from young children (Roberts 2002:336). Smith et al. (2007) had 24 caregiver-child pairs in their study, and collected 10 hours of home recording for each. Of those 10 hours, there resulted on average 6 to 7 hours of analyzable speech (J. Smith, p.c.). They were able to obtain 100-150 tokens of the *hoose* variable per child from this quantity of recording (Smith et al. 2007:72).

For this study, with a minimum of 10 hours of self-recording at home per family, I was able to obtain between 3.5 and 6 hours of analyzable speech per family, with the exception of the A. family, who had to terminate participation in the study prematurely due to family circumstances. Activities recorded by the families included visits to the park, community art classes, eating meals at home, doing homework, playing doctor and teacher, doing housework, watching TV, reading out loud, feeding the family rabbit, singing, and even trips to the bathroom. With the exception of small sections of

³³ Despite this, Guy's 1991 study of -t,d deletion in 7 speakers uses 30-60 minute interviews, from which he extracted 100-200 tokens total per speaker.

recording usually when beginning and ending a recording session, participants mostly did not discuss the recording process or any other aspects of the study itself.³⁴

³⁴ These portions of the recordings were included for analysis and classified under their own category of speech style, as will be discussed in Chapter 5.

5 ANALYSIS AND RESULTS

5.1 Methodology

5.1.1 Data

Recordings collected during fieldwork were transcribed using Elan transcription software. As each participant family member was given their own digital recorder, and families were instructed to use them simultaneously, multiple recordings were produced for each recording session. Recordings were aligned in Elan to produce one transcription file for each recording event. While some families recorded more than the requested 10 hours, recordings were transcribed only up to 10 hours per family. As mentioned in Chapter 4, the A. family was the exception, recording about five hours before they had to terminate their participation in the study; their recorded speech was transcribed in its entirety.

After transcription was completed, tokens of syllable-final /ɾ/ and the 2nd person singular preterit were coded directly in the transcript using numeric codes, for all 17 participants. Some tokens were labeled “unclear” when the recording was not clear enough to confidently determine the variant produced; this was due to various types of noise in the recording, such as participants speaking at the same time, wind, other background noise, and microphone interference. Further details of the coding of each variable are discussed in sections 5.1.3.1 and 5.1.3.2. I used the LDC Spanish Lexicon (Garrett et al. 1997) as a starting point for a pronouncing dictionary, and supplemented

it with entries for lexical items from the data as necessary. Python scripts were then used to extract additional linguistic information about variable tokens and their linguistic environments from the transcripts and the Spanish Lexicon.

A total of 2,536 tokens of syllable-final /ɾ/ were coded to attain 2,225 clear tokens, leaving 311 unclear tokens which were not included for analysis.³⁵

Family	Name	Token Count of Syllable-final /ɾ/		
		Clear	Unclear	Total
R	Andrea R.	259	20	279
R	Ilsa R.	100	18	118
J	Patricia J.	200	13	213
J	Margarita J.	100	20	120
A	Carolina A.	200	20	220
A	Moises A.	104	17	121
A	Cristina A.	31	7	38
C	María C.	204	36	240
C	Claudia C.	99	26	125
C	Linda C.	100	15	115
C	German C.	72	21	93
F	Diana F.	201	8	209
F	Laura F.	101	6	107
F	Luis F.	99	15	114
E	Gloria E.	200	45	245
E	Ruby E.	100	16	116
E	Fabricio E.	55	8	63
Total		2225	311	2536

Table 5.1: Number of syllable-final /ɾ/ tokens per speaker.

³⁵ All tokens were coded by myself, and selected tokens were reviewed with Dr. Gillian Sankoff.

For adults, approximately 100 tokens each were coded in the interview and at-home recording contexts, for a total of around 200 tokens per caregiver. For children, the goal was to code 100 tokens each from the at-home recordings, though there was not sufficient speech data to do so for Cristina A., German C., and Fabricio E. Table 5.1 gives the counts of clear, unclear, and total tokens coded per participant; caregivers are listed first in each family.

Family	Name	Token Count of 2 nd Person Singular Preterit		
		Clear	Unclear	Total
R	Andrea R.	71	5	76
R	Ilsa R.	43	1	44
J	Patricia J.	56	1	57
J	Margarita J.	16	0	16
A	Carolina A.	30	1	31
A	Moises A.	4	0	4
A	Cristina A.	0	0	0
C	María C.	42	4	46
C	Claudia C.	23	2	25
C	Linda C.	20	0	20
C	German C.	4	0	4
F	Diana F.	66	0	66
F	Laura F.	28	0	28
F	Luis F.	20	0	20
E	Gloria E.	52	0	52
E	Ruby E.	21	1	22
E	Fabricio E.	7	0	7
Total		503	15	518

Table 5.2: Number of 2nd person singular preterit tokens per speaker.

A total of 518 tokens of the 2nd person singular preterit were coded to attain 503 clear tokens, leaving 15 unclear tokens which were not included for analysis. All tokens of the 2nd person singular preterit were coded in the at-home, as well as interview, speech data. Cristina A. unfortunately did not produce the verb form in question at all during her recorded speech. This seems likely to be due to her family's reduced participation in the study, as well as her being one of the less talkative children; there is not enough data to suggest that the 2nd person singular preterit was not in her grammar.

5.1.2 Social factors

The external factors considered for this study are speech style and the speaker-specific factors of age, sex, education, and time spent in the United States. Social class is not included as a factor due to the similarity in socioeconomic status of the participants. Age and sex apply only to the child participants, as the caregivers are all women and close in age.³⁶ Child ages range from 3 to 8 years, and are reported in years and months. Table 5.3 shows the age and sex of the 11 children in the study. The children are shown in descending order of age, with colors identifying family membership.

³⁶ Caregiver ages are given in Table 4.1 in Section 4.2.

Family	Name	Age	Sex
C	Claudia C.	8;8	F
F	Laura F.	8;8	F
A	Moises A.	7;5	M
C	Linda C.	7;5	F
E	Ruby E.	6;10	F
A	Cristina A.	6;4	F
R	Ilsa R.	6;3	F
J	Margarita J.	5;2	F
F	Luis F.	4;8	M
E	Fabricio E.	4;5	M
C	German C.	3;2	M

Table 5.3: Speaker-specific social factors for child participants.

Education and time spent in the US apply only to the adult participants, as the children were either elementary school students or of pre-school age at the time of the study, and with the exception of Margarita J., were all born in the United States. Table 5.4 shows the years of education and years lived in the US at the time of the study (since immigrating from Mexico) of the family caregivers. The adults are shown in descending order of years in the US, with colors identifying family membership.

Family	Name	Years in US	Years of Education
C	Maria C.	11	0
F	Diana F.	11	16
E	Gloria E.	10	9
A	Carolina A.	7	8
R	Andrea R.	6	10
J	Patricia J.	2	6

Table 5.4: Speaker-specific social factors for adult participants.

Speech style was coded for home recording speech data at the utterance level, and then applied to each token for analysis.³⁷ Following Smith et al. (2007), the initial speech contexts of ‘play,’ ‘routine,’ ‘teaching,’ and ‘discipline’ were used. ‘Play’ was coded when participants were engaged in physical play or make-believe games, or otherwise joking or teasing each other. Playing doctor was a popular game among participant families, as in the excerpt in (4) from the F. family coded as ‘play.’ In this and all following excerpts of speech data, all words containing syllable-final /ɾ/ and the 2nd person singular preterit inflection in the linguistic environment for variation are underlined both in Spanish and in the corresponding glosses.

(4)	Luis F.:	<i>Necesito más, [Laura].</i>	← Play
		‘I need more, [Laura].’	
	Laura F.:	<i>Aquí hay uno.</i>	← Play
		‘Here’s one.’	
	Diana F.:	<i><u>Doctor</u>, me duele, me siento mal.</i>	← Play
		‘ <u>Doctor</u> , it hurts, I don’t feel well.’	
	Laura F.:	<i>Apúrate!</i>	← Play
		‘Hurry!’	
	Diana F.:	<i>Que está haciendo, <u>doctor</u>?</i>	← Play
		‘What are you doing, <u>doctor</u> ?’	
	Luis F.:	<i>Curando.</i>	← Play
		‘Curing.’	

³⁷ For the preterit variable, only six tokens were produced during the caregiver interviews. These were also coded for style and included in analysis with tokens from home recordings, in order to add to the smaller token count for this variable; two tokens were in utterances addressed to children who were present during the interviews, coded as ‘routine’ style, three were within reported speech of interactions with children, coded as ‘routine’ as well, and one was a “soap box” type of utterance, coded in the ‘teaching’ category.

- Diana F.: *Que me cura, que tengo?* ← Play
Porque me duele mi pancita? ← Play
 'What are you curing, what do I have?
Why does my tummy hurt?'
 Luis F.: *Mm vas - este fuistes al hospital.* ← Play
Oh sí cuando – cuando te fue a dejar papi! ← Play
 'Mm you go -um you went to the hospital.
 Oh yeah when – when daddy went to bring you!'

'Routine' was coded for speech during meals and household chores, discussing day-to-day plans and schedules, talking about homework, errands, and so on. In (5), Gloria E. asks her daughter Ruby E. about a reading assignment for school.

- (5) Gloria E.: *Y ya lo leíste?* ← Routine
 'And did you already read it?'
 Ruby E.: *Sí.* ← Routine
 'Yes.'
 Gloria E.: *Cuándo?* ← Routine
 'When?'
 Ruby E.: *En mi escuela.* ← Routine
 'At my school.'
 Gloria E.: *Y lo apuntaste?* ← Routine
 'And did you note it down?'
 Ruby E.: *Qué?* ← Routine
 'What?'
 Gloria E.: *Y lo apuntaste?* ← Routine
 'And did you note it down?'

'Teaching' was coded when caregivers helped children with their homework or read out loud together. It was also coded when caregivers explicitly instructed children about how to do something, or tested their knowledge by asking them questions. Child

responses to questions and instruction were also coded under the ‘teaching’ context. Sometimes older siblings also engaged in teaching with their younger siblings as in (6); Diana F. is reading a book about the ocean with her son Luis F., and his sister Laura F. also joins in.

- | | | | |
|-----|-----------|--|------------|
| (6) | Diana F.: | <i>Qué es eso? Unas - unas olas,
el <u>mar</u>? Qué es?</i>
‘What’s that? Some – some waves,
the <u>ocean</u> ? What is it?’ | ← Teaching |
| | Luis F.: | <i>Es el <u>mar</u>.</i>
‘It’s the <u>ocean</u> .’ | ← Teaching |
| | Diana F.: | [gasp] <i>Ay qué <u>mar</u> tan más peligroso.</i>
‘[gasp] Oh what a very dangerous <u>ocean</u> .’ | ← Teaching |
| | Luis F.: | <i>Pero hay tiburones.</i>
‘But there are sharks.’ | ← Teaching |
| | Diana F.: | <i>Hay tiburones...
Como se llaman los tiburones in inglés?</i>
‘There are sharks...
What are sharks called in English?’ | ← Teaching |
| | Luis F.: | <i>Mm...</i> | ← Teaching |
| | Laura F.: | Sharks! | ← Teaching |
| | Luis F.: | Shark! | ← Teaching |
| | Diana F.: | Sharks. <i>Y <u>muerden</u>?
Tienen muchos dientes?</i>
‘Sharks. And do they <u>bite</u> ?
Do they have a lot of teeth?’ | ← Teaching |

‘Discipline’ was coded for any scolding, telling children not to do something, or discussion of punishment by caregivers, along with child responses to these utterances. Warning of potential consequences for misbehavior or admonishing for self-incurred negative consequences were also fairly frequent conversational contexts coded as

‘discipline.’ In (7), Patricia J. discovers that her daughter Margarita J. has cut the pages of a book, and scolds her. In (8), Maria C. threatens punishment to her daughter Claudia C. if she repeats some unknown bad behavior.

- (7) Patricia J.: *Ay, no sabes quién cortó este libro?* ← Discipline
A ver qué me dicen tus ojos... ← Discipline
que fuiste tú, [Margarita].
No debes de cortar los libros. ← Discipline
Me escuchaste? ← Discipline
 ‘Oh, you don’t know who cut this book?’
 ‘Let me see what your eyes tell me...
 that it was you, [Margarita].
 You must not cut books.
 Did you hear me?’
- (8) Maria C.: *La - me vuelves a hacer y te pego.* ← Discipline
Y no te vuelvo a dar nada de agua. ← Discipline
 ‘It - you do that to me again and I’ll hit you.
 And I won’t give you any more water.’

The styles of ‘recording,’ ‘child-child,’ and ‘adult-adult’ were added to reflect additional contexts in the data. ‘Recording’ was applied to any utterances regarding the activity of recording speech for this study, or of the equipment involved, including microphones, digital recorders, battery chargers, and backpacks. ‘Recording’ was also used to label any speech where the participants deliberately addressed the recorder, such as to announce who was present or what activity they were engaged in, or to explain a circumstance to the researcher. In (9), Carolina A. addresses me during an at-home recording session to explain why her son Moises is not participating. In (10), Andrea R. announces that she is going to be playing doctor with her daughter Ilsa R. In (11), Luis F. is upset that he hasn’t heard his voice played back from the recorder.

- (9) Carolina A.: *Bueno [Moises] se siente indisponible.* ← Recording
Dejó de conversar con nosotros, ← Recording
está enojado.
De cierta manera, no sé que decirle, ← Recording
está un poco mal de humor, no sé.
 ‘Well [Moises] feels unavailable.
 He stopped conversing with us, he’s angry.
 Apparently, I don’t know what to tell you,
 he’s in a bit of a bad mood, I don’t know.’
- (10) Andrea R.: *Aquí estoy con mi hija,* ← Recording
vamos a jugar al doctor.
 ‘Here I am with my daughter,
 we’re going to play doctor.’
- (11) Luis F.: *Mm diche (=dije) algo,* ← Recording
y - y n- no dició (=dijo) nada.
 ‘Mm I said something,
 and – and it d- didn’t say anything.’
- Diana F.: *Sí, así dijiste, ahorita lo vamos a* ← Recording
escuchar, quieres escucharlo?
 ‘Yes, you said it like this, we’re going to
 listen to it soon, do you want to listen to it?’
- Laura F.: *Estaba haciendo sonido así [noise].* ← Recording
 ‘He was making a noise like this [noise].’

‘Child-child’ and ‘adult-adult’ styles were reserved for when a participant was speaking exclusively to a peer, and parents or children, respectively, were not participating in the conversation. Example (12), coded as ‘child-child’ speech, is an excerpt of the conversation between German C. and his older sister Linda C. as he tries to keep up with her riding their bikes in the park. In (13) is a section of ‘adult-adult’ speech when Maria talks with a friend in the park who’s come to play soccer with the C. family. A short section of one recording was also coded as ‘child-rabbit’, when Laura F. spoke to the family rabbit, Blanca Nieves (‘Snow White’), or Blanquita (with one token of non-

standard preterit –s); an excerpt is shown in (14). Tokens in the ‘child-rabbit’ section were ultimately grouped with the ‘child-child’ category and then in a broader ‘informal’ style category, to be further discussed in Section 5.2.

- | | | | |
|------|------------|---|---------------|
| (12) | German C.: | <i>[Linda]! [Linda]! Para! [crying]</i>
‘[Linda]! [Linda]! Stop! [crying]’ | ← Child-Child |
| | Linda C.: | <i>Qué?</i>
‘What?’ | ← Child-Child |
| | German C.: | <i>Para!</i>
‘Stop!’ | ← Child-Child |
| | Linda C.: | <i>Oh, me quieres seguir?</i>
‘Oh, do you want to follow me?’ | ← Child-Child |
| | German C.: | <i>Mm hm.</i> | ← Child-Child |
| | Linda C.: | <i>Okay, sigueme. Voy a ir despacito.</i>
‘Okay, follow me. I’m gonna go slow.’ | ← Child-Child |
| | | ... | |
| | German C.: | <i>[Linda], no rápido! Despacito!</i>
‘[Linda], not fast! Slow!’ | ← Child-Child |
| | Linda C.: | <i>No rápido, despacitito?</i>
‘Not fast, slow?’ | ← Child-Child |
| | German C.: | <i>Mm hm.</i> | ← Child-Child |
| | Linda C.: | <i>Okay.</i> | ← Child-Child |
| (13) | Friend 1: | <i>Y las tenis?</i>
‘What about your sneakers?’ | ← Adult-Adult |
| | Maria C.: | <i>Tú también trajistes chanclas. [laughing]</i>
‘You brought sandals too.’ [laughing] | ← Adult-Adult |
| | Friend 1: | <i>Como me voy a quedar de portera.</i>
‘Since I’m going to be the goalie.’ | ← Adult-Adult |

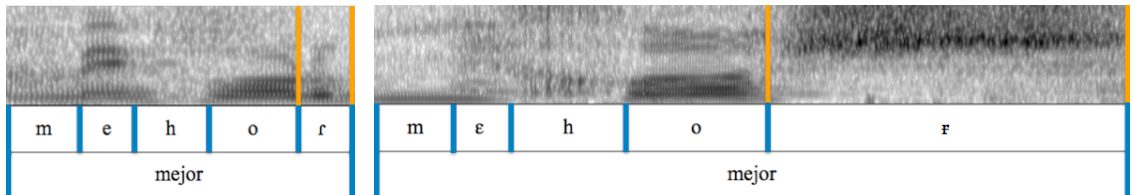
- Maria C.: *Mira, ahí está la [Friend 2] y está su esposo. ← Adult-Adult*
Ya hacemos un buen equipo pa' jugar. [laughing]
 'Look, there's [Friend 2] and there's her husband.
 We already have a good team to play.' [laughing]
- (14) Laura F.: *Bueno, hasta mañana Blanquita, sí? ← Child-Rabbit*
Dáme un besito. [laughing] ← Child-Rabbit
Gracias por tu besito, Blanquita. ← Child-Rabbit
Buenas noches! ← Child-Rabbit
Mañana la mejor ma- mi mamá ← Child-Rabbit
te va a traer más comida.
 'Okay, goodnight Blanquita, alright?
 Give me a kiss. [laughing]
 Thank you for your kiss, Blanquita.
 Goodnight!
 Tomorrow the best [thing is that] mo- my mom's
 going to bring you more food.'
- Diana F.: *Sí, mañana le tengo que traer comida. ← Routine*
 'Yes, I have to bring her food tomorrow.'
- Laura F.: *Ven, te escuchastes lo que dijo mi mami? ← Child-Rabbit*
Te va a traer (=traer) más comida! ← Child-Rabbit
 'Hey, did you hear what my mom said?
 She's going to bring you more food!'

5.1.3 Linguistic factors

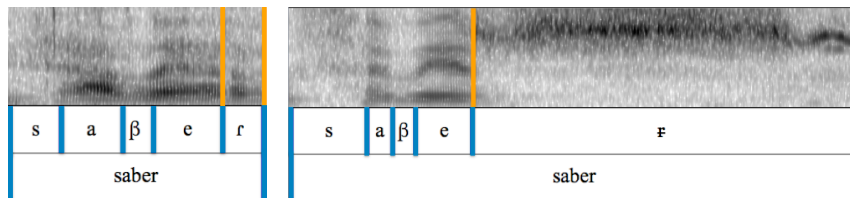
5.1.3.1 Variation in syllable-final /ɾ/

As discussed in Chapter 3, previous descriptions of this variation in Mexican Spanish have referred to /ɾ/ assibilation, frication, or both. In the analysis of data for this study, I did not find a clear distinction between what could be called assibilated and fricated variants. There was some variability in the phonetic realization of the non-standard variant; for example, some realizations of /ɾ/ were voiced and some voiceless, some were more or less strident, some tokens had more of a palatal quality while some sounded

alveolar, and some could be described as continuous while others were produced with repeated articulation, as a voiceless trill.³⁸ The nature of the natural speech data collected for this study does not facilitate a detailed acoustic analysis of the non-standard variant. Additionally, further dividing the non-standard variant into different variants when it is already of low frequency would result in low token counts prohibitive for statistical analysis. Considering this, I examine all non-standard variants characterized by frication or devoicing in one category. As discussed in Chapter 3, I refer to the process as ‘frication of /r/’, and the variant as ‘fricative /r/’ with the symbol [ɾ̥], taking the phonetic notation for a fricative flap variant used in the Atlas Lingüístico de México (ALM) (Lope Blanch 1990). Figures 5.1-5.11 show spectrograph images of selected tokens of syllable-final /r/ to illustrate realizations of the non-standard variant.

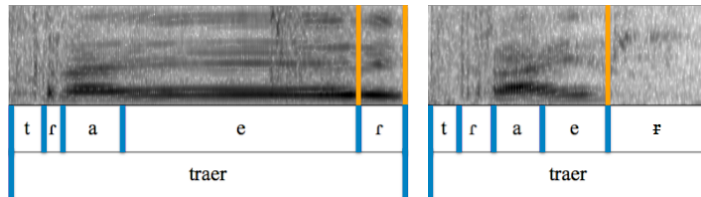


Figures 5.1 & 5.2: The word *mejor* ‘better’ pronounced with a standard flap [ɾ] by Diana F. (left), and with a non-standard [ɾ̥] by Patricia J. (right).

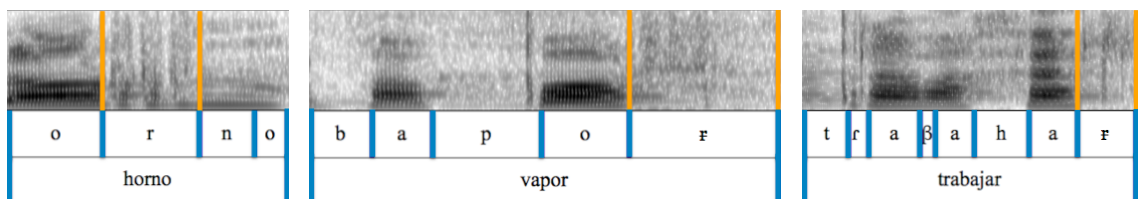


Figures 5.3 & 5.4: The word *saber* ‘to know’ pronounced with a standard flap [ɾ] by Maria C. (left), and with a non-standard [ɾ̥] by Andrea R. (right).

³⁸ However, for many tokens these parameters were not clearly discernible, so it was not possible to describe each token along all of these dimensions.



Figures 5.5 & 5.6: The word *traer* ‘to bring’ pronounced with a standard flap [ɾ] (left), and a non-standard voiceless trill (right), both by Maria C.



Figures 5.7, 5.8 & 5.9: The word *horno* ‘oven’ pronounced with a standard trill [r] (left), and the words *vapor* ‘steam’ (center), and *trabajar* ‘to work’ (right) pronounced with non-standard voiceless trills, all by Patricia J.

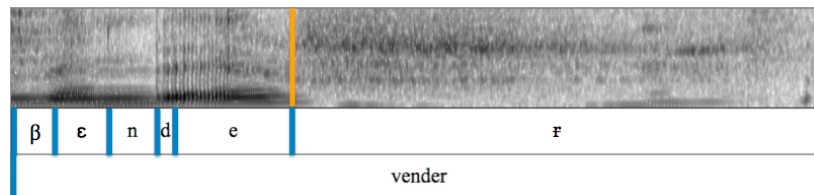


Figure 5.10: The word *vender* ‘to sell’ pronounced with a non-standard retracted palatal [ʀ] by Gloria E.

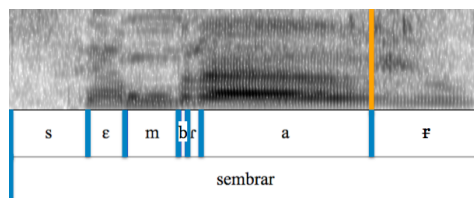


Figure 5.11: The word *sembrar* ‘to plant’ pronounced with a non-standard voiced fricative [ʀ] by Maria C.

Concerning the envelope of variation, while most descriptions of the frication of syllable-final /ɾ/ referred to its occurrence only in syllable-final or word-final position, Rissel (1989) reported assibilation in syllable-initial and intervocalic position. These

environments were also considered in the initial analysis of this study, but were not found to present any non-standard variants. Thus results are reported for frication of /ɾ/ in syllable-final position, as non-standard variants were observed both word-internally and word-finally.

Syllable-final /ɾ/ was coded for three variants of the dependent variable: standard;³⁹ fricative [ɸ]; and deleted, for absence of any realization of /ɾ/. Although none of the prior studies or observations of variation in syllable-final /ɾ/ in Mexico (reported in Chapter 3) discussed a deleted variant, I found that all speakers in this sample deleted syllable-final /ɾ/ with some frequency, and I have thus included it for analysis. Following /ɾ/ (whether realized as [ɾ] or [r]) was considered a neutralizing environment for this variable, so any word-final tokens followed by a word beginning with /ɾ/ were not coded. Examples of each variant from at-home recordings are given in (15)-(17).

- | | | | |
|------|--------------|--|----------------------------------|
| (15) | Diana F.: | <i>Me voy a sentir</i> [sentir]
<i>mejor</i> [mɛhoɾ]?
‘Am I going to <u>feel better</u> ?’ | ← Standard [ɾ]
← Standard [ɾ] |
| (16) | Patricia J.: | <i>A lo mejor</i> [mɛhoɸ].
‘ <u>Maybe</u> .’ | ← Fricative [ɸ] |
| (17) | Ilsa R.: | <i>...y él ya está quedando mejor</i> [mɛho].
‘...and he is already getting <u>better</u> .’ | ← Deleted |

Word position and grammatical status were coded as potential independent variables. Syllable-final /ɾ/ was coded for ‘internal’ or ‘final’ word position. A passage

³⁹ Realizations of the underlying /ɾ/ as both the flap [ɾ] and the trill [r] were coded as the standard variant.

from Patricia J.'s interview in (18) gives examples of the variable /ɾ/ as coded in word-internal and word-final positions.

- (18) Patricia J.: *En un local... vendían tortillas [toɾtijas].* ← Internal
 [...] *No, no fue de la familia, fue a que*
fui a buscar [βuskar] trabajo ← Final
para igual aportar [aporɾar] un poco. ← Internal & Final
 'In a store... they sold tortillas.
 [...] No, it wasn't a family [business], it was that
 I went to look for work
 to contribute a little anyway.'

Grammatical status was coded as either 'infinitive' or 'other', as syllable-final /ɾ/ occurs frequently in the infinitive verbal inflection (in *-ar*, *-er*, or *-ir*). Example (19) gives a token in a noun, coded as 'other', and (20) gives an infinitive token. Although the majority of infinitive tokens are also word-final, word-internal infinitives do occur with post-verbal object clitics, as in (21) where German C. (age 3;2) tries to convince his mother to buy him chocolate at the store.

- (19) Diana F.: *Siempre se pone su sueter [sweter] al revés.* ← Other
 'He always wears his sweater backwards.'
- (20) Margarita J.: *Porque un niño acá pintó todo .* ← Other
Lo quiso pintar [pinta]. ← Infinitive
 'Because a boy painted everything here.
 He wanted to paint it.'
- (21) German C.: *Vamos a cocinarlo [kosinalo], el chocolate,* ← Internal infinitive
las comamos... un pastel.
 'Let's cook it, the chocolate,
 let's eat them... a cake.'

Finally, additional information about the linguistic environment of each token was extracted using Python scripts for further potential independent variables: following segment (consonant, vowel, or pause), following place of articulation, following manner of articulation, and stress of the syllable containing the token.⁴⁰

5.1.3.2 Second person singular preterit alternation

The 2nd person singular preterit was coded for two variants of the dependent variable: ‘o’, meaning the standard *-aste* or *-iste*; and ‘-s’, the addition of non-standard *-s* resulting in *-astes* or *-istes*. Following /s/ was considered a neutralizing environment for this variable, so any tokens followed by a word beginning with /s/ were not coded.⁴¹ Word position was not coded because the preterit inflection is invariably word-final.

The two preterit inflections *-aste* and *-iste* represent three verb conjugations. Tokens were coded for membership in 1st, 2nd, or 3rd conjugation; 1st conjugation verbs have infinitive inflection *-ar* and preterit *-aste*, 2nd conjugation verbs have infinitive *-er* and preterit *-iste*, and 3rd conjugation infinitive *-ir* and again preterit *-iste*. Examples of 2nd person singular preterit tokens in each conjugation are given in (22) - (23).

⁴⁰ Following glides were grouped with vowels for the following segment factor.

⁴¹ In her 2012 study of non-standard preterit *-s*, Barnes excluded any meta-linguistic tokens, in which speakers discussed the non-standard form, from the envelope of variation. She also excluded any verbs that were invariant in the 2nd person singular preterit, either exclusively used with the standard or non-standard form (Barnes 2012:39). I did not find any meta-linguistic tokens in my data, so no such exclusion was made. There was not enough evidence to suggest that any particular verb was invariant in the speech of the participants in this study, as all invariant verbs in my data had very low token counts. Thus no lexical items were excluded from the envelope of variation.

- (22) Claudia C.: *Te lastimastes?* ← 1st (-ar)
 ‘Did you hurt yourself?’
 Linda C.: *Ow!*
 Claudia C.: *Aquí también?*
 ‘Here too?’
 Linda C.: *Sí.*
 ‘Yes.’
 Claudia C.: *Cuando te caístes?* ← 2nd (-er)
 ‘When you fell?’
 Linda C.: *Sí.*
 ‘Yes.’
- (23) Margarita J.: *Verdad que me comí este y - y - y es este?*
 ‘I ate this and – and – and it’s this, right?’
 Patricia J.: *Mm hm.*
 Margarita J.: *Pero te reíste, verdad mamá?* ← 3rd (-ir)
 ‘But you laughed, right mom?’
 Patricia J.: *Mm hm.*

The subject of the verb was coded for presence and position with three factor levels; ‘pronominal pre-verbal’ for the pronominal subject *tú* preceding the verb, ‘pronominal post-verbal’ for the pronominal subject *tú* following the verb, and ‘null’ for lack of a subject or pro-drop. Examples of each are given in (24) - (26).

- (24) Moises A.: *Uh y estaba jugando... yo soccer solito, y **tú** me cogiste, mamá.* ← Pre-verbal subject
 ‘Uh and I was playing... soccer alone, and **you** [came and] got me, mom.’
- (25) Carolina A.: *Esto lo hiciste **tú**?* ← Post-verbal subject
 ‘Did **you** make this?’

- (26) Fabricio E.: *Adónde lo buscastes?* ← Null subject
 ‘Where did you look for it?’
- Gloria E.: *Mm?*
- Fabricio E.: *En dónde lo buscastes?* ← Null subject
 ‘Where did you look for it?’
- Gloria E.: *Cuál?*
 ‘Which one?’
- Fabricio E.: *Esto.*
 ‘This.’
- Gloria E.: *Pues allí abajo estaba.*
 ‘Well it was down there.’

The presence of a reflexive subject pronoun was also coded as either ‘present’ or ‘absent,’ as shown in (27)-(28). Note that the use of a reflexive subject pronoun is independent of whether the nominative subject is pronominal or null.

- (27) Carolina A.: *Yo te castigué porque tú **te** pusiste a llorar como loco ahí afuera.* ← Reflexive pronoun
 ‘I punished you because you started crying like crazy out there.’
- (28) Ilsa R.: *[Felipe]! Mira, ya me bajaste mi pantalón!* ← No reflexive pronoun
 ‘[Felipe]! Look, now you pulled down my pants!’
- Andrea R.: *No, [Felipe].*
- Ilsa R.: *Ya me bajaste mis shorts.* ← No reflexive pronoun
 ‘Now you pulled down my shorts.’

Each token of the 2nd person singular preterit was coded for subject specificity. ‘Specific’ subjects are those referring to a particular person, while ‘non-specific’ was coded for use of a 2nd person singular generic subject. Note that either a pronominal or

null subject may be specific or non-specific. In (29), German C. uses a specific subject, addressing his mother Maria C. while they are shopping at a grocery store. In (30), discussing the importance of a nutritious breakfast for children to perform well in school during her sociolinguistic interview, Diana F. switches between the generic subjects *uno* ‘one’ and ‘you’ (with pro-drop).

- (29) German C.: *Mamá, no me comprastes?* [crying] ← Specific
 ‘Mom, you didn’t buy it for me? [crying]’
- (30) Diana F.: *...Que tiene uno que desayunar a fuerza para que aguante el cuerpo. Si no desayunas, ya perdistes la comida más importante o la - el almuerzo más importante.* ← Non-specific
 ‘...That one has to eat breakfast so that the body holds up. If you don’t eat breakfast, you already lost the most important meal or the – the most important lunch.’

Finally, additional information about the linguistic environment of each token was extracted using Python scripts to consider further potential independent variables: following segment (consonant, vowel, or pause), following place of articulation, and following manner of articulation. Stress was not considered as a factor, as stress in the preterit verbal inflection is invariant.

5.2 Analysis

5.2.1 Variation in syllable-final /r/

Analyses of syllable-final /r/ deletion and frication were conducted separately, followed by an analysis of overall lenition. First, the binary distinction of frequency of deletion

versus realization of syllable-final /ɾ/ was considered. Second, the binary distinction of frequency of frication versus standard pronunciation of /ɾ/ was considered out of the subset of all phonetically realized tokens, excluding the deleted variant. Finally, the deleted and fricative variants were combined into one category, and lenited /ɾ/ was considered versus standard pronunciation of /ɾ/.⁴² Unclear tokens were excluded from analysis.

Logistic regression analysis was conducted using step-up step-down modeling in Rbrul (Johnson 2009).

Token counts for some styles for some speakers were too low for statistical analysis to have been informative using all levels initially coded for the style factor. ‘Play’ and ‘routine’ generally patterned together and were considered to represent informal speech styles. The same was true of ‘discipline’ and ‘teaching,’ which were considered to be formal styles.⁴³ Furthermore, the styles encompassing peer interactions—‘child-child’, ‘child-rabbit,’ and ‘adult-adult’—were also found to pattern for the most part with the informal styles. Therefore, for all analyses of /ɾ/ as well as the preterit, style categories were grouped into two factor levels: ‘play,’ ‘routine,’ ‘adult-adult,’ ‘child-child,’ and ‘child-rabbit’ were recoded as ‘informal,’ while ‘teaching,’ ‘discipline,’ and ‘recording’ were recoded as ‘formal.’

⁴² This was not to presuppose that frication and deletion are necessarily part of one process of lenition, a question that remains open, but to examine the possibility that a more general perception of lenition of /ɾ/ as a variable process could be informing the acquisition of the children in this study.

⁴³ This patterning of styles mirrors the findings of Smith et al. (2007).

For analysis of the frication of /ɾ/, the factor of following segment was also grouped into two levels, ‘pause’ and ‘other.’ This was because there were no fricative tokens in pre-vocalic position in the child data. However, vowels were not excluded from the envelope of variation as categorically prohibiting frication of /ɾ/ because [ʁ] did occur pre-vocally in the adult data. Instead, vowels and consonants were recoded into an ‘other’ category.

5.2.2 Second person singular preterit alternation

For analysis of the 2nd person singular preterit, frequency of the addition of non-standard –s was considered out of all tokens. Unclear tokens were excluded from analysis.⁴⁴

Subject specificity was examined in the interest of comparability with Barnes’ 2012 study (though she did not find it to be a significant factor for the use of non-standard –s). However, only 1 of 503 preterit tokens occurred with a non-specific subject (from Diana F. in Section 5.1.3.2, example (30)), so this factor was excluded from analysis. Presence or absence of a reflexive subject pronoun was also excluded as a factor for analysis due to low token count; only 4 out of 503 preterit tokens occurred with a reflexive pronoun.

⁴⁴ Meta-linguistic comments regarding (the stigma attached to) the use of the non-standard preterit were excluded from analysis in Barnes 2012. I did not observe any such discussion of the variable either in my recorded speech data, or in my interactions with the study participants.

As with syllable-final /r/, step-up/step-down regression analysis was conducted in Rbrul to determine significant factors for use of the non-standard preterit -s.

Style categories were grouped into ‘informal’ and ‘formal’ as described above in Section 5.2.1.

The factor of subject was also regrouped into two levels from the original three, ‘pronominal’ and ‘null.’ This was because only 4 out of 71 pronominal subjects with the 2nd person singular preterit occurred in post-verbal position; thus, the factor levels of pre-verbal subject and post-verbal subject were coded into one level for all pronominal subjects.

5.3 Results

5.3.1 Variation in syllable-final /r/

All speakers produced the deleted and standard variants of syllable-final /r/ at some frequency in the speech data collected. All 6 of the adults produced [ɾ], while it was recorded for 8 out of the 11 children. Results demonstrated the effect of the caregivers’ variable usage on their children, as well as peer influence.

As discussed in Chapter 3, some previous accounts reported frication of /r/ as only occurring, or occurring most frequently, in pre-pausal position. In this study as well, the frequency of [ɾ] was significantly higher preceding a pause than preceding vowels and consonants, for both children and adults. Nonetheless, [ɾ] was also produced pre-vocally and pre-consonantly, as well as word-internally in syllable-final position.

5.3.1.1 All speakers

The difference between the interview and home recording speech contexts for caregivers did not prove to be significant for deletion, frication, or overall lenition of syllable-final /r/. Likewise, the same predictors that were significant for each variant in caregivers' home recording speech were significant when interview speech was included in analysis. Further regression analyses were conducted using only the home recording data for caregivers, as children were recorded in the home context only, and adult interview data was not coded for style.

Figure 5.12 and Table 5.5 show the overall rates of each variant of syllable-final /r/, as well as lenition, representing a combined rate of the two non-standard variants, for children and adults as groups. On average, children use less [ɹ] than their caregivers, while they present more frequent deletion and overall lenition.

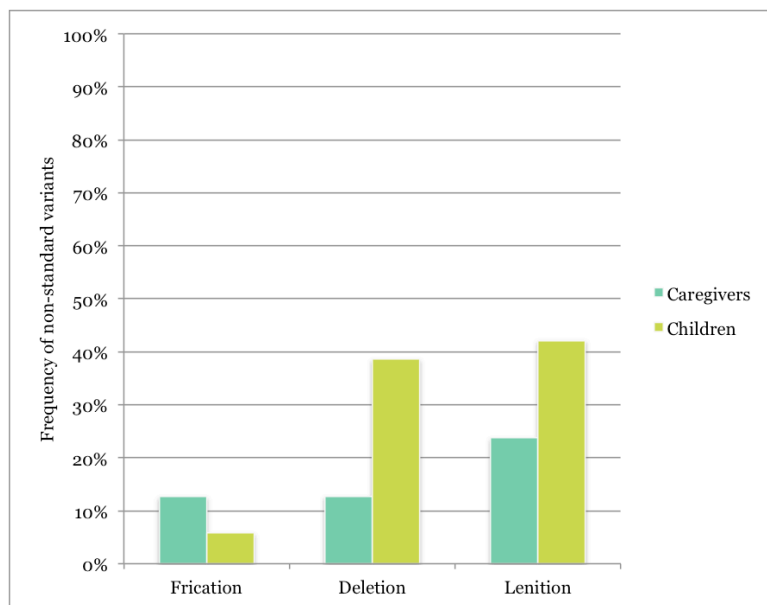


Figure 5.12: Rates of frication, deletion, and lenition of syllable-final /r/ for caregivers and children as groups. Frication is calculated with $[\text{ʃ}]/[\text{ʃ}]+[\text{r}]$, deletion is calculated with $\emptyset/\emptyset+[\text{ʃ}]+[\text{r}]$, and lenition is calculated with $\emptyset+[\text{ʃ}]/\emptyset+[\text{ʃ}]+[\text{r}]$.

	Frication		Deletion		Lenition	
	% \emptyset	N	% \emptyset	N	% \emptyset	N
Caregivers	13%	578	13%	662	24%	662
Children	6%	590	39%	961	42%	961

Table 5.5: Rates of frication, deletion, and lenition of syllable-final /r/ for caregivers and children as groups.

Figure 5.13 and Table 5.7 show the rates of syllable-final [ʃ] of all speakers.

Caregiver rates of [ʃ] range from 2-24% and child rates range from 0-13%. Percentages of the fricative [ʃ] are shown out of all tokens of realized syllable-final /r/, excluding deleted tokens; Ns in Tables 5.6 and 5.7 represent the sum of standard and fricative tokens. Note

that the y-axis maximum of the chart is 50% to facilitate visualization.⁴⁵ In Table 5.6 and following tables, caregivers are listed in descending order of frequency of use, and children within each family are listed in descending order of age.

It appears from this data that the younger generation is moving towards a lower rate of frication than their parents; in fact, 3 of the 11 children did not produce [ɸ] at all. The residual effect of caregiver influence is also seen in the similarity of the slopes of the lines connecting caregivers to their children. A regression analysis of the factors for fricative [ɸ] with all speakers showed that there is a significant difference in frication rates between adults and children as groups, confirming a change in usage from one generation to the next. The only other significant factor for fricative [ɸ] was following segment.

Factor		Log odds	N	% [ɸ]	Centered factor weight
Following segment	Pause	1.073	209	27.8%	0.745
	Other	-1.073	959	5%	0.255
Adult/child	Adult	0.554	578	12.5%	0.635
	Child	-0.554	590	5.8%	0.365

Table 5.6: Significant factors in the regression for frication of /ɾ/ for all speakers.

⁴⁵ German C. and Linda C.'s data points, shown with red triangles, overlap in Figure 5.13 as they both produced the fricative variant at a rate of 0%; likewise, Fabricio E. and Ruby E.'s data points, shown with light green squares, overlap as they both produced the fricative variant at a rate of 10%.

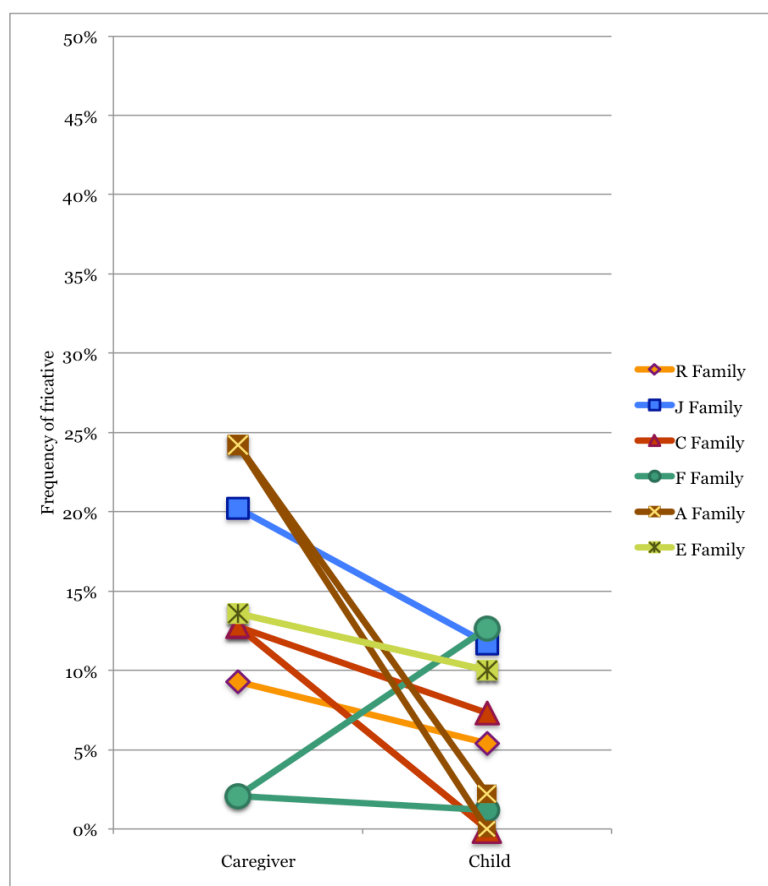


Figure 5.13: Caregiver and child rates of syllable-final [ɸ].

Caregivers			Children		
Speaker	% [ɸ]	N	Speaker	% [ɸ]	N
✠ Carolina A.	24%	62	✠ Moises A.	2%	45
✠ Patricia J.	20%	94	✠ Cristina A.	0%	13
✠ Gloria E.	14%	81	✠ Margarita J.	12%	77
▲ Maria C.	13%	94	✠ Ruby E.	10%	20
◆ Andrea R.	9%	151	✠ Fabricio E.	10%	10
● Diana F.	2%	96	▲ Claudia C.	7%	82
			▲ Linda C.	0%	81
			▲ German C.	0%	24
			◆ Ilsa R.	5%	74
			● Laura F.	1%	85
			● Luis F.	13%	79

Table 5.7: Caregiver and child rates of syllable-final [ɸ].

The one exception to the pattern is Luis F., who is the only child with a higher rate of fricative [ɸ] than his mother. This is likely a developmental effect as Luis, at age 4;8, sometimes produced the syllable-final /ɾ/ with a quality that sounded interdental, particularly in word-internal position preceding voiceless obstruents.

Figure 5.14 and Table 5.9 show the rates of the deletion of /ɾ/ out of all tokens of syllable-final /ɾ/, for all speakers.⁴⁶ Caregiver rates of \emptyset range from 4-38% and child rates range from 16-82%. Unlike results for the fricative variant, it appears that the younger generation is moving towards a higher rate of deletion than their parents.⁴⁷ The residual effect of caregiver influence is also seen in the similarity of the slopes of the lines connecting caregivers to their children.

⁴⁶ The relative sizes of data points are not meaningful, but meant to facilitate visualization with overlapping data points.

⁴⁷ The possibility of a developmental effect influencing increased child rates of deletion will be discussed further in Section 5.3.1.2.

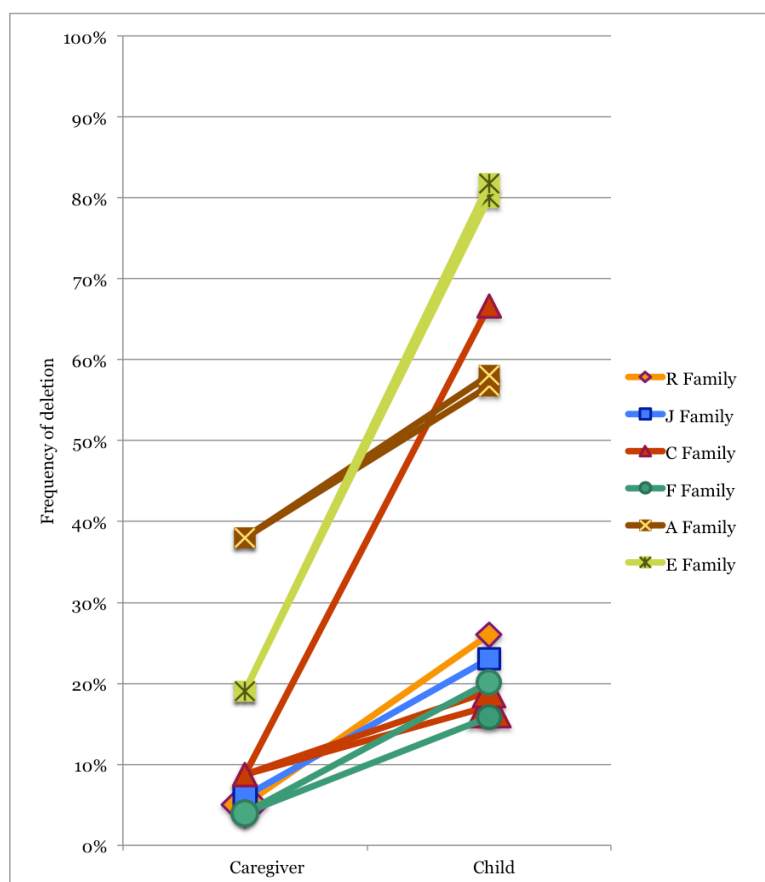


Figure 5.14: Caregiver and child rates of syllable-final /ɾ/ deletion.

Caregivers			Children		
Speaker	% Ø	N	Speaker	% Ø	N
✠ Carolina A.	38%	100	✠ Moises A.	57%	104
			✠ Cristina A.	58%	31
✠ Gloria E.	19%	100	✠ Ruby E.	80%	100
			✠ Fabricio E.	82%	55
▲ Maria C.	9%	103	▲ Claudia C.	17%	99
			▲ Linda C.	19%	100
			▲ German C.	67%	72
■ Patricia J.	6%	100	■ Margarita J.	23%	100
◆ Andrea R.	5%	159	◆ Ilsa R.	26%	100
● Diana F.	4%	100	● Laura F.	16%	101
			● Luis F.	20%	99

Table 5.9: Caregiver and child rates of syllable-final /ɾ/ deletion.

A regression analysis of all the factors for deletion with all speakers showed that there is a significant difference in deletion rates between adults and children as groups, confirming a change in usage from one generation to the next. The other significant factors for deletion were following segment and the factor including grammatical status and stress. Results are shown in Table 5.8.

Factor		Log odds	N	% Ø	Centered factor weight
Following segment	Pause	0.210	317	34.1 %	0.552
	Consonant	0.237	1016	28.3%	0.559
	Vowel	-0.447	290	20.3%	0.39
Grammatical status & stress	Infinitive (stressed)	0.430	906	32.3%	0.606
	Unstressed & not infinitive	-0.070	403	25.8%	0.482
	Stressed & not infinitive	-0.359	314	18.5%	0.411
Adult/child	Child	0.722	961	38.6%	0.673
	Adult	-0.722	662	12.7%	0.327

Table 5.8: Significant factors in the regression for deletion of /r/ for all speakers.

Finally, Figure 5.15 and Table 5.10 show the rates of lenition of syllable-final /r/ of all speakers. The rate of lenition is a combined rate of deleted and fricative tokens, out of all tokens of syllable-final /r/.⁴⁸ Caregiver rates of lenition range from 6-53% and child rates range from 17-84%.

⁴⁸ Cristina A. and Moises A.'s data points, shown with brown squares, overlap in Figure 5.15 as they both had rates of lenition at 42%.

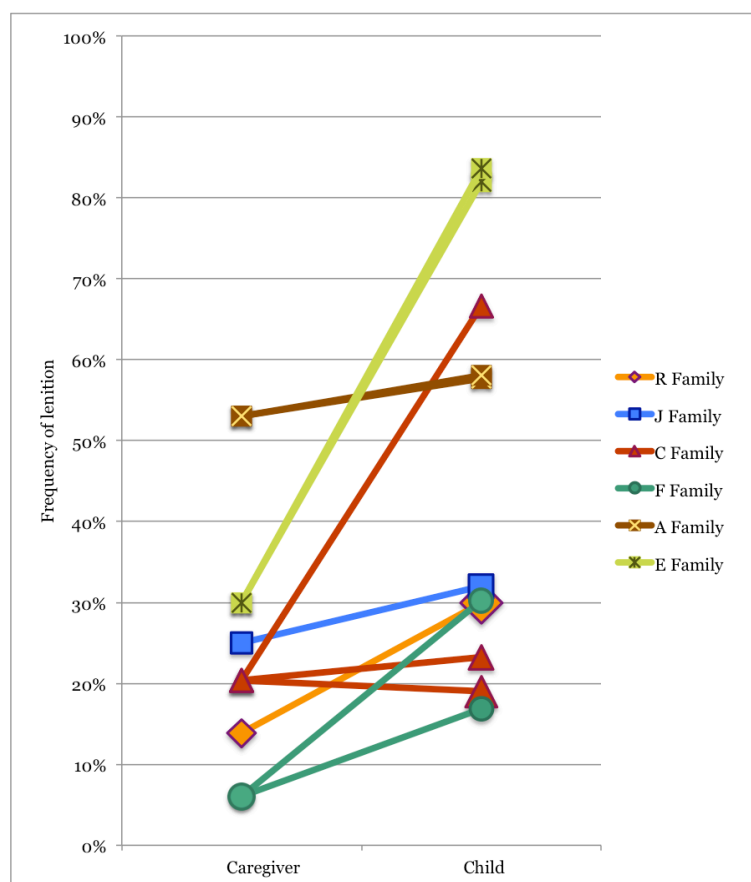


Figure 5.15: Caregiver and child rates of syllable-final /r/ lenition.

Caregivers			Children		
Speaker	% [ɾ] & Ø	N	Speaker	% [ɾ] & Ø	N
✠ Carolina A.	53%	100	✠ Moises A.	58%	104
			✠ Cristina A.	58%	31
✠ Gloria E.	30%	100	✠ Ruby E.	82%	100
			✠ Fabricio E.	84%	55
✠ Patricia J.	25%	100	✠ Margarita J.	32%	100
▲ Maria C.	20%	103	▲ Claudia C.	23%	99
			▲ Linda C.	19%	100
			▲ German C.	67%	72
◆ Andrea R.	14%	159	◆ Ilsa R.	30%	100
● Diana F.	6%	100	● Laura F.	17%	101
			● Luis F.	30%	99

Table 5.10: Caregiver and child rates of syllable-final /r/ lenition.

Although the younger generation had lower rates of the fricative [ʁ] than their parents, when considering the combined rate of [ʁ] and deletion, it appears that children are moving towards a higher rate of overall lenition than their parents. The residual effect of caregiver influence is also seen in the similarity of the slopes of the lines connecting caregivers to their children.

A regression analysis of all the factors for lenition with all speakers showed that there is a significant difference in lenition rates between adults and children as groups, again confirming a change in usage from one generation to the next. The other significant factors for deletion were following segment, the factor including grammatical status and stress, and style. Results are shown in Table 5.11.

Factor		Log odds	N	% Ø + [ʁ]	Centered factor weight
Following segment	Pause	0.693	317	52.4%	0.667
	Consonant	0.077	1016	33.1%	0.519
	Vowel	-0.770	290	20.7%	0.316
Grammatical status & stress	Infinitive (stressed)	0.407	906	39.8%	0.6
	Unstressed & not infinitive	-0.025	403	31%	0.494
	Stressed & not infinitive	-0.382	314	24.2%	0.406
Adult/child	Child	0.428	961	42.1%	0.605
	Adult	-0.428	662	23.7%	0.395
Style	Formal	0.177	349	36.7%	0.544
	Informal	-0.177	1274	34.1%	0.456

Table 5.11: Significant factors in the regression for lenition of /ɾ/ for all speakers.

Following the above regression analyses of all speakers as a group, further analyses were conducted on adult tokens and child tokens separately, using as predictors

only those factors found to be significant for all speakers, as well as further factors specific to adults and children, respectively. These results are reviewed in Section 5.3.1.2.

5.3.1.2 Adults and children as groups

Regression analysis on adult use of [ɾ] was conducted with years of education and years spent in the United States as continuous factors, in addition to following segment, which was found to be significant for frication for all speakers, as discussed above. All three factors were found to be significant for adult rates of [ɾ], as shown in Table 5.12. Pause, as above, was a favoring following environment for [ɾ], while more years of education and more time in the US both predicted lower rates of frication. The effect of education is as expected for a non-standard variant. However, the apparent time interpretation for the effect of years spent in the United States suggests that speakers reduce their frequency over time after immigrating. This is perhaps less expected, because the Spanish-speaking community in South Philadelphia is almost exclusively represented by people from the rural areas of Puebla. There should be no pressure to move away from local dialect features to accommodate speakers of other dialects, for example.

Factor		Log odds	N	% [ɾ]	Centered factor weight
Following segment	Pause	1.338	89	44.9%	0.792
	Other	-1.338	489	6.7%	0.208
Education	1-year increase	-0.109	—	—	—
Time in the US	1-year increase	-0.132	—	—	—

Table 5.12: Significant factors in the regression for frication of /ɾ/ for adults.

Regression analysis on child use of [ɾ] was conducted with age as a continuous factor, sex, and following segment, which was found to be significant for frication for all

speakers, as discussed above. An additional factor of caregiver frication rate was also included as a continuous predictor. Each child was assigned their mother's frication rate as a numerical value, to test the effect of parental input on child variable usage. Age and following segment were found to be significant factors, while sex and caregiver frication rate were not, as shown in Table 5.13. Pause was a favoring following environment for [ɸ], as it was for the adults. Younger children used the fricative [ɸ] more frequently than older children. This pattern reflects the finding that children on the whole are moving towards lower rates of [ɸ]; as children grow older and enter their peer group, they follow their peers by reducing frequency of [ɸ]. However, the fact that caregiver frication rate was not significant suggests that not all children may be acquiring their parents' variable usage when it comes to the fricative variant.⁴⁹

Factor		Log odds	N	% [ɸ]	Centered factor weight
Following segment	Pause	0.852	120	15.0%	0.701
	Other	-0.852	470	3.4%	0.299
Age	1-year increase	-0.313	—	—	—

Table 5.13: Significant factors in the regression for frication of /ɾ/ for children.

⁴⁹ Considering the possible developmental effect on Luis' production of [ɸ] discussed in Section 5.3.1.1, a separate regression analysis was conducted excluding Luis to test the possibility that the caregiver frication rate might be a significant predictor for the other children. The results of the regression showed that caregiver frication rate was still not a significant factor for the other children.

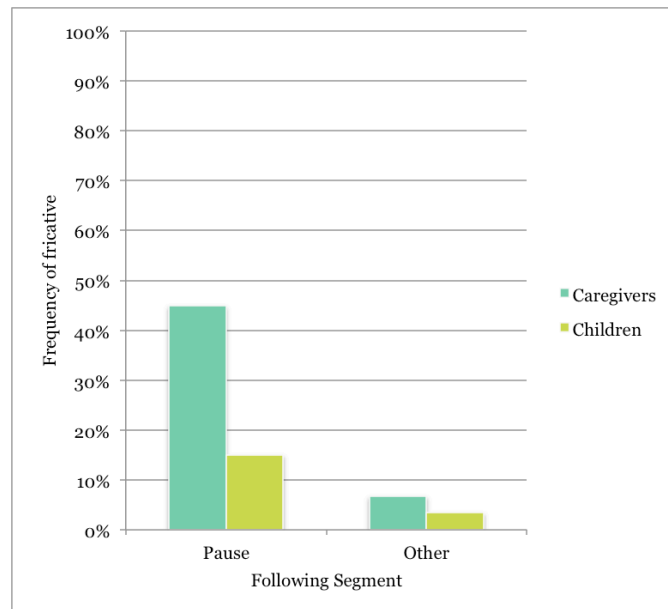


Figure 5.16: Caregiver and child rates of [ʁ] by following segment. This factor was significant for caregivers and children.

Figure 5.16 plots rates of [ʁ] against following segment, for a comparison of the effect of this linguistic environment for adults and children. While children present lower rates of the fricative variant, it is evident that following segment has the same effect for caregivers and children.

Regression analysis on adult deletion of /ɾ/ was also conducted with the factors of years of education, years spent in the United States, and following segment, as well as the grammatical status and stress category, which was found to be significant for all speakers for deletion, as discussed above. The factor of grammatical status and stress was significant for adult rates of deletion, as shown in Table 5.14. When /ɾ/ was part of an infinitive ending, deletion was more likely; however, the ranking of the non-infinitive factor levels was different from that for all speakers. In analysis of all speakers together,

deletion was least frequent in stressed non-infinitive syllables, while for adults it was least frequent in unstressed non-infinitive syllables. The results of the analysis of deletion for adults were quite different from those for frication. The social factors tested as predictors were not found to be significant as they were for frication of /ɾ/ for adults. The factor of following segment was not found to be significant either, as it was in the analysis of frication of /ɾ/ for all speakers. This brings into question whether deletion is part of one process of lenition that includes frication for the adult generation, or whether it may represent a separate variable feature.

Factor		Log odds	N	% Ø	Centered factor weight
Grammatical status & stress	Infinitive (stressed)	0.660	351	17.4%	0.659
	Stressed & not infinitive	-0.047	149	9.4%	0.488
	Unstressed & not infinitive	-0.614	162	5.6%	0.351

Table 5.14: Significant factors in the regression for deletion of /ɾ/ for adults.

Regression analysis on child deletion of /ɾ/ was conducted with the factors of age, sex, caregiver deletion rate, following segment, and grammatical status and stress. All factors were found to be significant, as shown in Table 5.15. Comparing the four boys to the seven girls, boys deleted more frequently than girls, as expected for a non-standard variant. A higher caregiver deletion rate also predicted a higher rate of deletion for the child. Thus, it appears that for children as a group the overall rate of deletion is modeled after that of their caregivers. Considering this however, the direction of the effect of age is unexpected; younger children deleted /ɾ/ more frequently than older children, whereas we would expect children to increase their rate of deletion with age, i.e., on

entering their peer group, if an increase in deletion were taking place over time in the community. There is the possibility that this result is due to a developmental effect naturally affecting the younger children more, though this would need to be confirmed with longitudinal data. As discussed in Section 3.2.4, acquisition studies have found that children begin producing [ɾ] by around age 3, while they may take up to two more years to produce it consistently, with one study showing alternation between [ɾ] and ∅ during this period of mastery (Díaz-Campos 2001). Pause was a favoring following environment for deletion, as it was for frication. Again if a developmental effect is contributing to child deletion rates, the effect of following segment, significant for children but not for adults, could be related to phonetic development rather than phonological conditioning of the variable. When /ɾ/ was part of an infinitive ending, deletion was more likely, while non-infinitive endings, both stressed and unstressed, disfavored deletion.⁵⁰ For children, deletion was least frequent in *stressed* non-infinitive syllables, mirroring the results for all speakers, while for adults it was least frequent in *unstressed* non-infinitive syllables. Thus the children differ from their caregivers for the deleted variant in a few ways; no external factors were significant for adults while they were for children, the internal factor of following segment was significant for children but not for adults, and the ranking of factor levels for grammatical status and stress differed between children and adults.

⁵⁰ Considering the higher rates of deletion in infinitive suffixes, the question of whether any of the children in the study might have acquired the infinitive morpheme without an underlying /ɾ/ was investigated. All of the children did in fact produce [ɾ] (and sometimes [ʔ]) in infinitive endings; German C., the youngest participant at age 3;2, had the highest rate of deletion of infinitive /ɾ/ at 80%.

Factor		Log odds	N	% \emptyset	Centered factor weight
Following segment	Consonant	0.313	591	40.4%	0.578
	Pause	0.224	211	43.1%	0.556
	Vowel	-0.537	159	25.8%	0.369
Grammatical status & stress	Infinitive (stressed)	0.504	555	41.8%	0.623
	Unstressed & not infinitive	-0.019	241	39.4%	0.495
	Stressed & not infinitive	-0.485	165	26.7%	0.381
Sex	Female	0.234	631	31.5%	0.558
	Male	-0.234	330	52.1%	0.442
Age	1-year increase	-0.474	—	—	—
Caregiver deletion rate	1-unit increase	7.904	—	—	—

Table 5.15: Significant factors in the regression for deletion of /ɾ/ for children.

Figure 5.17 plots rates of \emptyset against grammatical status and stress, for a comparison of the effect of this linguistic environment for adults and children.

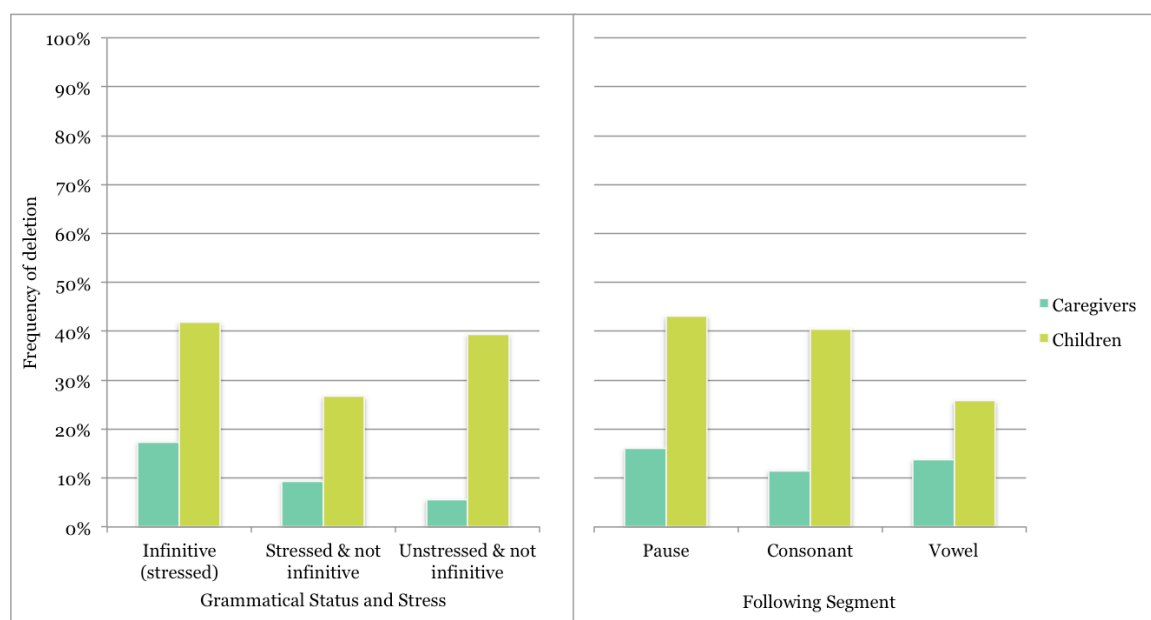


Figure 5.17: Caregiver and child rates of \emptyset by grammatical status and stress on the left, and following segment on the right. Following segment was a significant factor for deletion for children, but was not significant for caregivers.

While the infinitive ending favors deletion most for all speakers, the other factor levels differ in ranking for caregivers and children. Rates of \emptyset are also plotted against following segment, although this factor was significant only for children and not for adults.

As with the analysis of deletion, regression analysis on adult overall lenition of /r/ was conducted with the factors of years of education, years spent in the United States, following segment, and the grammatical status and stress category. Style was also included as a factor, as it was found to be significant for all speakers for lenition, as discussed above. The factors of following segment, grammatical status and stress, and education were significant for adult rates of lenition, as shown in Table 5.16. Style and years spent in the US were not significant factors. Pause was a favoring following environment for lenition, followed by consonant and then vowel, and more years of education predicted lower rates of lenition; the effects of these predictors are parallel to those for [ʀ]. When /r/ was part of an infinitive ending, lenition was more likely, while non-infinitive endings, both stressed and unstressed, disfavored deletion; the effect of this predictor is parallel to that for deletion. Again, for all speakers, lenition was least frequent in *stressed* non-infinitive syllables, while for adults it was least frequent in *unstressed* non-infinitive syllables.

Factor		Log odds	N	% Ø & [ɾ]	Centered factor weight
Following segment	Pause	1.161	106	53.8%	0.762
	Consonant	-0.271	425	19.1%	0.433
	Vowel	-0.891	131	14.5%	0.291
Grammatical status & stress	Infinitive (stressed)	0.557	351	30.8%	0.636
	Stressed & not infinitive	-0.210	149	18.1%	0.448
	Unstressed & not infinitive	-0.346	162	13.6%	0.414
Education	1-year increase	-0.07	—	—	—

Table 5.16: Significant factors in the regression for lenition of /ɾ/ for adults.

Regression analysis on child overall lenition of /ɾ/ was conducted with the factors of age, sex, style, caregiver lenition rate, following segment, and grammatical status and stress. All factors other than sex and style were found to be significant, as shown in Table 5.17. Younger children lenited /ɾ/ more frequently than older children. A higher caregiver lenition rate also predicted a higher rate of lenition for the child. Pause was a favoring following environment for deletion, followed by consonant and then vowel, as it was for the adults. When /ɾ/ was part of an infinitive ending, lenition was more likely, while non-infinitive endings, both stressed and unstressed, disfavored lenition; the effect of this predictor is parallel to that for deletion. For children, lenition was least frequent in *stressed* non-infinitive syllables, mirroring the results for all speakers, while for adults it was least frequent in *unstressed* non-infinitive syllables. The significance of caregiver lenition rate suggests that for children as a group the overall rate of lenition is modeled after that of their caregivers.

Factor		Log odds	N	% \emptyset + [ʔ]	Centered factor weight
Following segment	Pause	0.433	211	51.7%	0.607
	Consonant	0.256	591	43.1%	0.564
	Vowel	-0.689	159	25.8%	0.334
Grammatical status & stress	Infinitive (stressed)	0.450	555	45.6%	0.611
	Unstressed & not infinitive	-0.021	241	42.7%	0.495
	Stressed & not infinitive	-0.429	165	29.7%	0.394
Age	1-year increase	-0.35	—	—	—
Caregiver lenition rate	1-unit increase	4.54	—	—	—

Table 5.17: Significant factors in the regression for lenition of /r/ for children.

Figure 5.18 plots rates of lenition against grammatical status and stress, as well as following segment, for a comparison of the effects of these significant linguistic environments for adults and children.

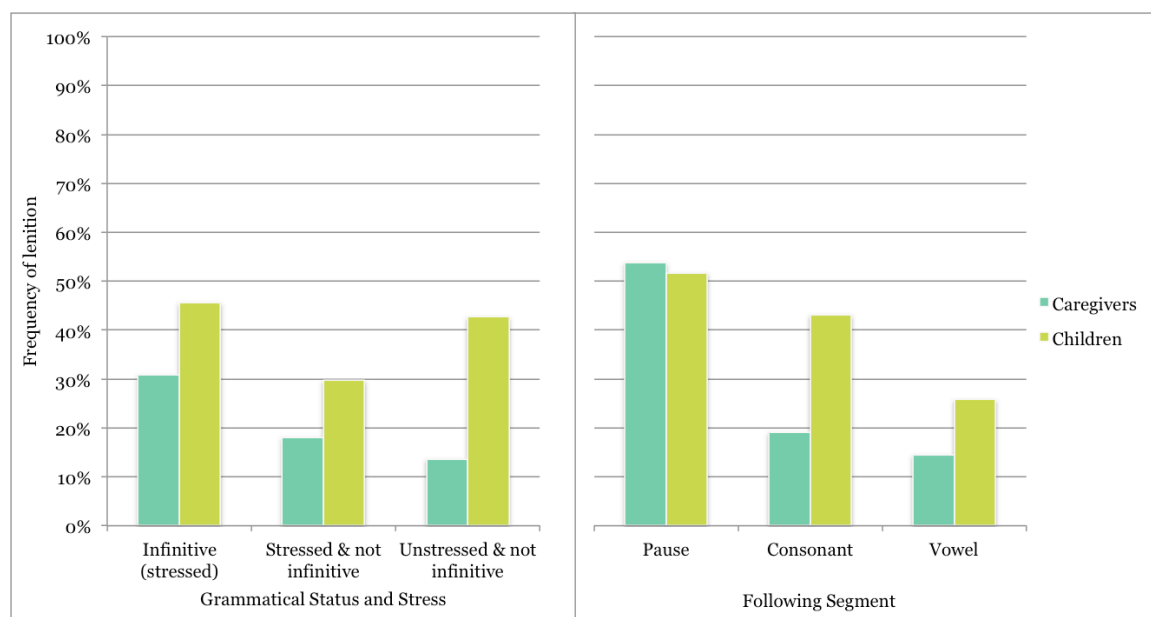
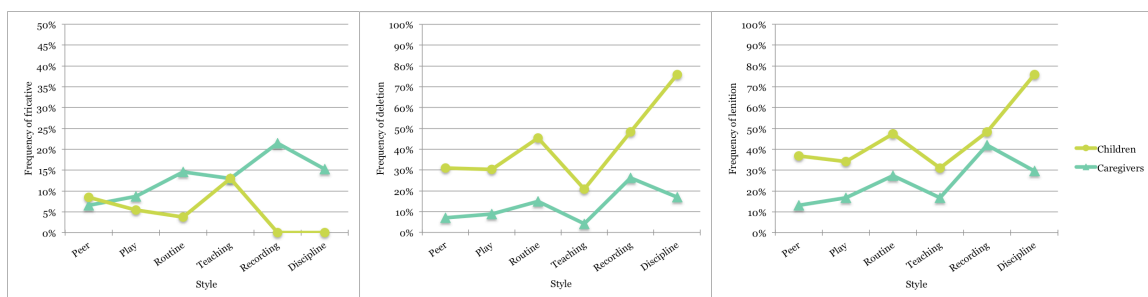


Figure 5.18: Caregiver and child rates of lenition by grammatical status and stress on the left, and following segment on the right. These factors were significant for caregivers and children.

As in the case of deletion, while the infinitive ending favors lenition most for all speakers, the other factor levels differ in ranking for caregivers and children. Meanwhile, the direction of the effect of following segment was the same for adults and children.

While style was not a significant factor in any of the multivariate analyses of syllable-final /r/, the results for the style contexts initially coded may nonetheless be indicative of acquisition of sociolinguistic competence for this variable. As can be seen in Figures 5.19-21, children as a group follow their caregivers' stylistic conditioning quite closely for deletion and overall lenition, while a striking lack of a pattern is apparent for frication.



Figures 5.19, 5.20 & 5.21: Caregiver and child rates of frication (left), deletion (center), and lenition (right) by style. The category “peer” encompasses both “child-child” and “adult-adult” speech.

This seems to correspond to the result that caregiver rates of deletion and lenition, but not frication, were significant predictors for child rates, suggesting that on a whole the children are not acquiring frication as part of the sociolinguistic variation involving syllable-final /r/.

5.3.1.3 Connections with previous studies

The following tables present a summary of results from this study as compared with those reported for previous studies of /ɾ/ frication. Results are reported only for the home recording data for adult participants (all women) in this study.

	% [ɾ] in word-final position		
	Moroleón, Matus-Mendoza 2004	Kennett Square, Matus-Mendoza 2005	Philadelphia, the present study
Overall	12%	—	—
Women	24%	10%	16%
Men	—	2%	—

Table 5.18: Rates of [ɾ] in word-final position for men, women, and overall, in Moroleón, Kennett Square, and Philadelphia (Data from Matus-Mendoza 2004, 2005).

	% [ɾ] in word-final position	
Grammatical status	Moroleón, Matus-Mendoza 2004	Philadelphia, the present study
Infinitive	14%	17%
Not infinitive	8%	14%

Table 5.19: Rates of [ɾ] in word-final position according to grammatical status, in Moroleón and Philadelphia (Data from Mendoza 2004).

		% [ɸ] in word-final position					
	Following segment	Mexico City, Perissinotto 1975	San Luis Potosí, Rissel 1989	Central Mexico, Moreno de Alba 1994	Moroleón, Matus-Mendoza 2004	Mexico City, Lastra & Butragueño 2006	Philadelphia, the present study
Overall	Vowel	—	—	—	8%	—	1%
	Consonant	—	—	—	12%	—	11%
	Pause	68.1%	—	≥40%	44%	27%	45%
Women	Pause	81.8%	37%	—	—	34%	45%
Men		38.9%	13%	—	—	21%	—

Table 5.20: Rates of [ɸ] in word-final position for men, women, and overall, according to following segment in Mexico City, San Luis Potosí, Central Mexico, Moroleón, and Philadelphia (Data from Perissinotto 1972, 1975; Moreno de Alba 1994; Rissel 1989; Matus-Mendoza 2004; Lastra & Butragueño 2006).⁵¹

Among the women from Puebla in Philadelphia in the current study, the rate of the fricative [ɸ] is considerably lower than for women in Mexico City (data for the latter having been collected in the 1960s). Meanwhile, when considering the other locales studied in Mexico and Kennett Square, PA, their values are fairly similar to those found in Philadelphia. If indeed this variable originated in Mexico City, this may reflect the results of a similar process of geographical diffusion of [ɸ] to Puebla as to Moroleón, San Luis Potosí, and other regions of Central Mexico. For the morphological and phonological environments reported, we can also see similar frequencies between the Philadelphia community and others, as well as consistency in the direction of effect of each conditioning factor.

⁵¹ Frequencies reported by Lastra & Butragueño (2006) are from their conversational data only, excluding word lists, and for what they describe as the assimilated variant, excluding a distinct variant that they describe as fricative.

5.3.2 Second person singular preterit alternation

All speakers with the exception of Cristina A. produced the second person singular preterit verb form in the speech data collected. Five of the 6 adults produced the non-standard -s, as in *-astes*, *-istes*, while it was recorded for all of the children who produced the preterit. Results demonstrated the effect of the caregivers' variable usage on their children, as well as peer influence.

5.3.2.1 All speakers

The overall rates of 2nd person singular preterit -s for children and adults as groups are shown in Figure 5.22 and Table 5.21. On average, addition of non-standard -s is more frequent for children than adults.

Figure 5.23 and Table 5.22 show the rates of the non-standard 2nd person singular preterit -s of all speakers. Caregivers on the left are connected by lines to their children on the right, and each family is shown with its own color and data point symbol.⁵² It appears from this data that the younger generation is moving towards a higher rate of non-standard preterit -s than their parents, although the pattern is somewhat less consistent than for syllable-final /ɾ/. Ilsa R. presents the most striking exception to this pattern, as the only child who produces preterit -s less frequently than

⁵² Cristina A. did not produce any 2nd person singular preterit tokens in her family's recordings, so she does not have a data point in this chart. Luis F. and Laura F.'s data points, shown with green circles, overlap in Figure 5.23 as their rates of preterit -s are very close at 85% and 86% respectively.

her mother, and considerably less frequently than the other children.⁵³ The residual effect of caregiver influence is also seen in the similarity of the slopes of the lines connecting caregivers to their children, with the E. family and R. family presenting exceptions.

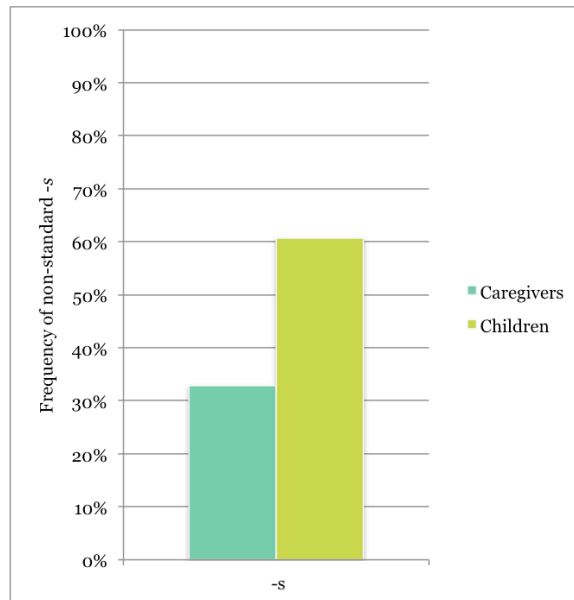


Figure 5.22: Rate of 2nd person singular non-standard preterit -s for caregivers and children as groups.

	% -s	N
Caregivers	33%	311
Children	61%	186

Table 5.21: Rate of 2nd person singular non-standard preterit -s for caregivers and children as groups.

⁵³ This result does not seem to be an accident of low token count, as Ilsa produced 43 tokens of the 2nd person singular preterit form. For now this anomaly remains unexplained.

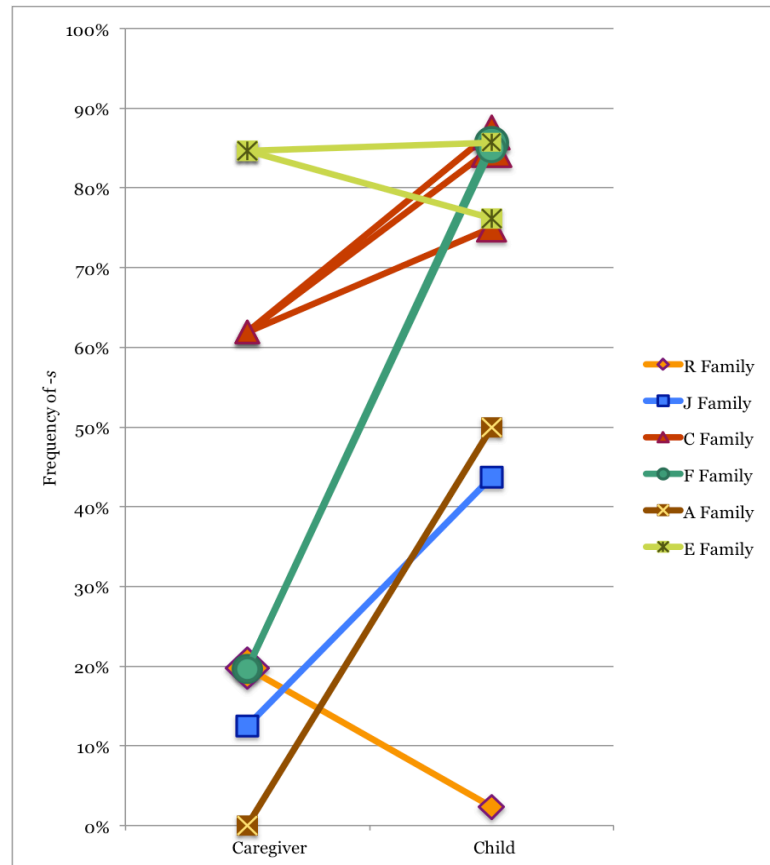


Figure 5.23: Caregiver and child rates of non-standard 2nd person singular preterit -s.

Caregivers			Children		
Speaker	% -s	N	Speaker	% -s	N
✕ Gloria E.	85%	52	✕ Ruby E.	76%	21
			✕ Fabricio E.	86%	7
▲ Maria C.	62%	42	▲ Claudia C.	87%	23
			▲ Linda C.	85%	20
			▲ German C.	75%	4
● Diana F.	20%	66	● Laura F.	86%	28
			● Luis F.	85%	20
◇ Andrea R.	20%	71	◇ Ilsa R.	2%	43
■ Patricia J.	13%	56	■ Margarita J.	44%	16
✕ Carolina A.	0%	30	✕ Moises A.	50%	4
			✕ Cristina A.	--	--

Table 5.22: Caregiver and child rates of non-standard 2nd person singular preterit -s.

A regression analysis of the factors for non-standard 2nd person singular preterit -s with all speakers showed that there is a significant difference in rates of -s between adults and children as groups, confirming a change in usage from one generation to the next. Shown in Table 5.23, the only other significant factor for preterit -s among all speakers was style.

Factor		Log odds	N	% -s	Centered factor weight
Adult/Child	Child	0.497	186	60.8%	0.622
	Adult	-0.497	317	32.8%	0.378
Style	Informal	0.405	397	48.4%	0.6
	Formal	-0.405	106	23.6%	0.4

Table 5.23: Significant factors in the regression for addition of 2nd person singular non-standard preterit -s for all speakers.

Following the above regression analysis of all speakers as a group, further analyses were conducted on adult tokens and child tokens separately, using style as a predictor, as well as further factors specific to adults and children, respectively. These results are reviewed in Section 5.3.2.2.

5.3.2.2 Adults and children as groups

Regression analysis on adult use of the non-standard preterit -s was conducted with years of education and years spent in the United States as continuous factors, in addition to style, which was found to be significant for all speakers, as discussed above. Years of education and years spent in the US were found to be significant for adult rates of -s, as shown in Table 5.24. More years of education disfavored use of non-standard preterit -s, while with more time spent in the US speakers were more likely to use the non-standard

-s. Although style was a significant factor in analysis of all speakers, it was not significant for adults as a group.

Factor		Log odds	N	% -s	Centered factor weight
Education	1-year increase	-0.117	—	—	—
Time in the US	1-year increase	0.285	—	—	—

Table 5.24: Significant factors in the regression for addition of 2nd person singular non-standard preterit -s for adults.

Regression analysis on child use of non-standard preterit -s was conducted with age as a continuous factor, sex, style, and caregiver -s rate. As in analysis of syllable-final /ɾ/, each child was assigned their mother's -s rate as a numerical value, to test the effect of parental input on child variable usage. Age, sex, and caregiver -s rate were found to be significant factors, while style was not, as shown in Table 5.25. Older children were more likely to use the non-standard variant of the preterit than younger children. In this case comparing 4 boys to 6 girls, due to the lack of preterit forms from Cristina A., boys were more likely to use non-standard -s than girls. A higher caregiver -s rate also predicted a higher rate of -s for the child. The significance of caregiver -s rate suggests that for children the overall rate of -s is modeled after that of their caregivers.

Factor		Log odds	N	% -s	Centered factor weight
Sex	Male	1.573	35	80%	0.828
	Female	-1.573	151	56.3%	0.172
Age	1-year increase	0.755	—	—	—
Caregiver -s rate	1-unit increase	3.384	—	—	—

Table 5.25: Significant factors in the regression for addition of 2nd person singular non-standard preterit -s for children.

As noted above, style was significant for speakers overall, but not for adults and children taken as groups. This may be due to low token counts of the 2nd person singular preterit in formal speech styles, which become lower and less evenly distributed when the data is divided into subsets (N=12 for children and N=94 for adults). Nonetheless, it is worth noting that children do show the same effect of style as their caregivers in their use of nonstandard preterit *-s*, as shown in Figure 5.24 and Table 5.26.

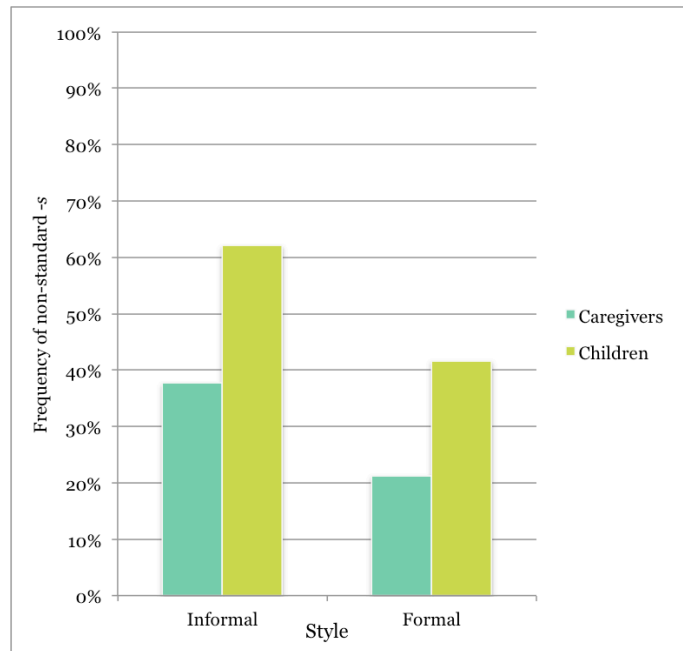


Figure 5.24: Caregiver and child rates of 2nd person singular non-standard preterit *-s* by style. This factor was not significant for caregivers or children as groups.

Style	Informal		Formal	
	% -s	N	% -s	N
Caregivers	38%	223	21%	94
Children	62%	174	42%	12

Table 5.26: Caregiver and child rates of 2nd person singular non-standard preterit *-s* by style.

While the more detailed style contexts were not used in multivariate analysis, these results again may be indicative of acquisition of sociolinguistic competence for this variable.

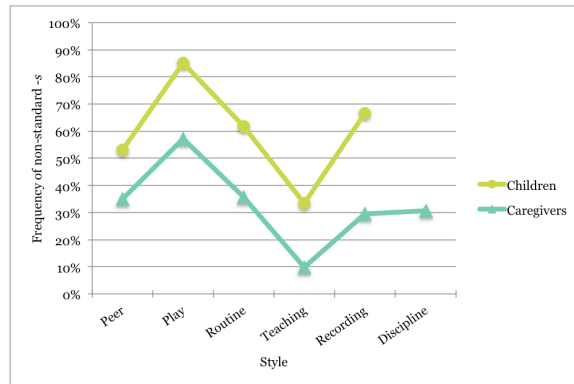


Figure 5.25: Caregiver and child rates of 2nd person singular non-standard preterit -s by style. The category “peer” encompasses both “child-child” and “adult-adult” speech.

As can be seen in Figure 5.25, children as a group follow their caregivers’ stylistic conditioning quite closely for addition of the non-standard preterit -s.

5.3.2.3 Connections with previous studies

The following tables present a summary of results from this study as compared with those reported for previous studies of the addition of non-standard 2nd person singular preterit -s. Results are reported only for the home recording data for adult participants (all women) in this study.

	Spain, Barnes 2012	Venezuela, Barnes 2012	Other countries, Barnes 2012	Twitter, Escalante 2015	Philadelphia, the present study
% non-standard preterit -s	13%	13.9%	16.1%	23.3%	33%

Table 5.27: Overall rates of non-standard 2nd person singular preterit -s in Spain, Venezuela, combined corpus speech data from other countries, from Twitter, and in Philadelphia (Data from Barnes 2012; Escalante 2015).

	% non-standard preterit -s	
Following segment	Spain, Venezuela, & other countries Barnes 2012	Philadelphia, the present study
Vowel	19.7%	40%
Consonant	12%	32%
Pause	9.1%	30%

Table 5.28: Rates of non-standard 2nd person singular preterit -s according to following segment, in combined corpus speech data from Spain, Venezuela, and other countries, and in Philadelphia (Data from Barnes 2012).

The rates of non-standard preterit –s found among the women from Puebla in Philadelphia in this study are notably higher than those found in other studies. This is likely due, at least in part, to the different nature of the data collected for these studies. While Barnes’ data included some conversational speech, it also included more formal registers such as television broadcasts; Escalante’s data is from a written, not spoken, register; and the current study uses entirely conversational speech. For a variable that is

often discussed as characteristic of informal speech, it is likely that the data for this study show higher frequencies because they include a greater proportion of informal registers. Finally, it remains unclear to what degree the frequency of non-standard preterit -s may depend on geographical region. Escalante's data has no regional identifiers so comparison with the current study is not possible. Barnes (2012) found very small differences between the regions in her study, but again the different nature of the data does not allow for a meaningful comparison with the current study.

6 CONCLUSION

Researching the acquisition of two variables in Spanish by the children of Mexican immigrants in Philadelphia, this study has shown not only different possible trajectories of transmission, but also differences in the kinds of influences that may have produced these trajectories. In the case of syllable-final /r/, a regional variable in Central Mexico reported previously to be undergoing change, children use the standard variant [r] at significantly lower rates than their parents' generation. Furthermore, the younger generation presents a change in the relative frequencies of the two non-standard variants, [ɾ] and Ø, deleting much more frequently while producing the fricative less frequently or not at all. In contrast, the addition of -s to the 2nd person singular preterit suffixes *-aste*, *-iste* is a feature widely reported in other varieties of Spanish, for which change in progress has not been previously observed. However, children also used the standard suffixes significantly less frequently than their caregivers, producing the non-standard *-astes* and *-istes* endings more frequently, a development that does not appear to be typical of the acquisition of stable variation. While previous studies of sociolinguistic acquisition have shown young children to match their parents' usage before entering their peer group, and even afterwards in the case of stable variation, the children in this study differ from their parents regardless of age and for both variables studied.

The frication of /r/ is documented in quantitative research reports by Perissinotto (1972, 1975), Rissel (1989), and Matus-Mendoza (2004). These studies suggest that this process may have been a change from below in Mexico City that then spread as a change

from above to regions of central Mexico. However, while Matus-Mendoza (2004) found that frequency of [ɾ] increased with a higher level of education in Moroleón, Mexico, I found the opposite effect among the adults from Puebla in this study. Thus, it is not clear whether frication of /ɾ/ was also a prestigious variant in Puebla when current members of the Philadelphia Mexican community began to immigrate from Puebla to South Philadelphia. Nonetheless, the effect of more time spent in the US leading to lower rates of [ɾ] in the Philadelphia community may reflect in apparent time a process that Matus-Mendoza (2004) hypothesized to have occurred among migrants from Moroleón in Kennett Square, PA. She suggested that those who migrated from Moroleón to Kennett Square used the fricative at much lower rates because, isolated from the influence of urban centers in Mexico such as Mexico City, they had left behind the regional and generational differences related to urban prestige in their home speech community. Thus, it is possible that the parent generation of the Philadelphia community is also moving away from the regional variant [ɾ] for similar reasons, and that the new generation is now advancing this change.

On the other hand, if the first generation of the Philadelphia Mexican community is not in fact participating in a reversal of frication of /ɾ/ (which further study could illuminate), there remains the possibility that the second generation could be initiating a reversal of this change away from the fricative variant.

Whereas several earlier reports deal with frication of /ɾ/, the current study provides the first report of deletion as an additional variant for syllable-final /ɾ/ in Central Mexican Spanish. It is of course possible that deletion of /ɾ/ is not a new

phenomenon for this dialect region, but simply has not been reported. Conversely, the presence of the deleted variant in the Mexican speech community in Philadelphia could reflect an incipient change towards increased deletion in Puebla or potentially Central Mexico in general, beginning in the generation from which Philadelphia's first immigrant generation has formed. Variation in syllable-final /ɾ/ may also be undergoing a reinterpretation by the younger generation, considering their increase in frequency of the deleted variant compared to their caregivers, in contrast to their decrease in frequency of [ɾ̃]. Finally, another possibility to consider is that deletion of /ɾ/ is in part a developmental effect, such that the children in this study would in fact reduce their rates of deletion with age.

As far as 2nd person singular preterit –s is concerned, if we postulate that it has been a stable variable in the speech community in Puebla, higher frequencies of use in the younger generation in Philadelphia may represent age grading, where older speakers, especially those in the workforce, use more of the standard form. On the other hand, language learners in the Philadelphia speech community would not be receiving multi-generational input to indicate stability, i.e., evidence of lack of change in apparent time. Thus, there is also the possibility that the second generation in Philadelphia could be reinterpreting what was a stable variable as a change in progress, and incrementing the change accordingly. Whatever the motivation, the fact that the young children of this community do not match their caregivers' usage suggests that they are not treating this as a stable variable.

Without comparable data from current residents of Puebla, nor apparent time data from the Philadelphia Mexican community,⁵⁴ it is not possible to make any strong claims about changes that have taken place or may be in progress among immigrants from Puebla in Philadelphia. Future trend studies of the community would shed light on whether the differences between the parent and child generations represent community change in apparent time, age grading, developmental effects, or some combination of these. Will the frication of /r/ continue to decline and eventually be lost from the speech community? Will the deletion of /r/ continue to rise in frequency, or will future studies of change in apparent time prove that higher rates of deletion among younger children are due to a developmental phase? Will the non-standard preterit -s maintain stability in the speech community or will it progress as a change in the direction of higher frequency of the addition of -s?

While these questions remain open, this study does show that even with reduced generational input for the children of this community, there is evidence that they are participating in language change. This may tell us that language learners are very resourceful in detecting the presence of a change in their speech community; or on the other hand, that lacking the necessary evidence in their input to determine stability versus change or the direction of change, the new generation quickly provides their own interpretation of the variation they encounter and develops a potentially new direction

⁵⁴ The recency of immigration to Philadelphia from Mexico and the relative youth of these immigrants means that multiple generations of adults from Puebla are not present in the Philadelphia Mexican immigrant community. The parental generation of women in this study ranged only from 25-29 years of age.

for their speech community. Finally, the findings presented here reinforce what other studies of child acquisition of sociolinguistic variation have shown: the persistence of caregiver as well as peer group influence in the variable aspects of the grammars of children in the process of language acquisition.

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